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SASHEN MULKI NA GWAMNATIN AMIRKA/WATAN NUWAMBAR
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Zanen Bangon Mujalla: ©iStockphoto

Ofishin Tsare-tsaren Watsa Labarai na Sashen Mulkin Gwamnatin Amirkane, ke buga wannan mujallar ta harkokin na'urorin wutar lantarki, a kowane wata, mai amfani da alamar *eJournal USA*. Wadannan mujallolin ya bincike dukan wadansu manyan al'amurran da Amirkha da sauran kasashen duniya, kazalika da kungiyoyi da ra'ayoyi da nazari da cibiyoyi ke fuskanta.

Ana buga kowace sabuwar mujallar Turanci a kowane wata, kafin a buga ta cikin harsunan Faransanci da na Portugal da Rashanci da kuma na Spain. Akwai kuma na musamman da ake bugawa a cikin harsunan Larabci da na China da kuma na Persia. Kowace mujalla kuma tana da kundinta da kuma lambarta.

Ba dole ba ne, duk kuma ra'ayin da aka bayyana a cikin mujallolin, ya kasance na manufofi da ra'ayin Gwamnatin Amirkha. Sashen Mulki na Gwamnatin Amirkha, ba shi da alhakin abubuwan da ake rubutawa, da kuma yin amfani da shafukan yanar-gizon da mujallolin ke da alaka da su. Wannan alhakin ya rataya ne a wuyan mawallafan kowane shafi na yanar-gizon da labaru da hotuna da kuma sauran zane-zanen da aka buga, ko kuma aka fassara, a wajen Amirkha, sai dai idan suna da wata ka'idar, ta musamman, da aka gindaya, wajen hana kwaikwayon ayyukan, don haka dole ne samu izni daga asalin mawallafa wannan mujalla.

Ofishin Tsare-tsaren Watsa Labaran na duniya, ya tanadi wannan fitowar da kuma sauran mujallolin da aka buga, a na'urorin lantarki na zamani, kazalika da jerin wadsanda za su fito nan gaba a yanar-gizo mai suna: <http://www.america.gov/publications/ejournals.html>.

Muna marhabin da duk wani korafi, zuwa ga dukan ofisoshin jadakancin Amirka dake kasarku, ko kuma ofisoshin mujallar:

Zuwa ga Editan, *eJournal USA*

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Gabatarwa



A 1943, wani shaihin malami kuma masanin tarihin da al'adun Kasar China, dan Kasar Ingila, Joseph Needham, wanda ya yi zamani daga 1900

zuwa 1995, tare da tawagarsa ta mawallafa al'amurran duniya, sun fara wallafa wani babbani littafin dake da tasiri a Karni na 20, game da manyan ayyukan da masana suka wallafa, mai suna Kimiyya da Ci Gaban Tahirin Kasar China, (*Science and Civilisation in China*). Wannan littafin ne, ya gano abinda, yau, aka fi sani da "Tambayoyin Needham" (The Needham Question), game da: Me ya sa Kasar China a zama mizanin gwajin duk wani ci gaban tarihin da ake samu a duniya, wanda ya dakushe ilmin Kas asheng Turai game da Kimiyya da Fasaha?

Masana, irin su Dan Diner, sun taba yin wannan tambayar game da ci gaban tarihin Addinin Islama, da zama wani abin koyi ga duk wani yunkurin harkokin tarihi, ba tun yau ba, kamar yadda Rahotonnin Kasidun Harkokin Ci Gaban Larabawa suka nuna, dangane da wani sashe daya na Musulmin duniyar nan.

Irin takaicin da Kasar Amirka ke gani, yau da kullum, na daya daga cikin abubuwan takaicin da ake gani, ga al'amurran duniya. Da wuya, mu yi karancin sababbin litattafan da wani yaron Kasar Amirka zai yi kuka, a kai, wadanda suka shafi rashin sanin darasin Lissafi ko kuma karancin maki, a fannin Kimiyya, wadanda irin wadannan litattafan sukan kushewa wannan kasar, idan sun tuna da Kasar Rome da Ingila, ko kuma wata babbar kasar da ta yi kasa a gwiwa, a dan tsakanin nan.

Wannan fitowar ta *eJournal USA* ta gano wadansu kwararan tambayoyin da suka dabaibaye wadannan mas'aloli, na: Mene ne kirkira? Gwamnatoci da jama'a na iya taimaka wa, wajen kirkire-kirkire? Ta yaya, bullowar na'urori masu kwa'walwa da fasahar sadarwar yanar-gizo za su shafi daidaituwar kirkire-kirkire?

Dukan mawallafan na mu, sun bayar da amsoshin tambayoyin nan, dabam dabani, ciki kuwa har da irin rawar da al'adu da tarihin yanayin kasa da ha'kin mallakar kirkire-kirkire. Har ila yau, mun gabatar da tarihin irin nasarorin da masu kirkire-kirkire suka samu, daga kasashen Amirka da Vietnam da Venezuela da Afrika ta Kud da kuma Belgium.

Muna fata za a ga alfanu da fa'ida da kuma amfanin wadannan wallafe-wallafen!

Daga Editoci.



Mafarin Kirkire-kirkire

Mutane da Wurare

7 Mene ne Kirkira?

Daga David Nordfors, Babban Darekta, kuma daya daga cikin wadanda suka kafa Cibiyar Nazarin Wallafe-wallafen Kirkire-kirkire ta VINNOVA, dake Standford.

Kirkira wata bayyana fasaha ce, tare da gabatarwa, wadda ta fi kamari ga fannonin tattalin arziki da kuma harkokin mulkin gwamnatoci.

15 Tarihi: Jeff Bigham

Jami'in Nazarin harkokin kimiyyar na'ura mai kwakwalwa na iya gano hanyar da yanar-gizo za ta amfani, hatta makafi da masu dundumi.

17 Al'ada da Kirkire-kirkire

Daga Shugaba, kuma wanda ya kafa Kanfanin CyberFone Technologies, Rocco Leonard Martino.

Al'adun dake sanya mutane yin hasashe, da kirkire-kirkire da kuma yin abubuwa ne zakaru, a duk wata gasa game da cin gashin kan harkokin tattalin arziki.

25 Tahiri: Chi Huynh

Kyalli ke bude taskar kirkire-kir-kire.

27 Yanayin Wuraren Kirkire-kirkire A Duniya

G. Pascal Zachary, dan jarida, mawallafi, kuma malami.

Kasancewar Kwarin Sinadri (Silicon Valley) da sauran yanayin wuraren kirkire-kirkiren ya zama dole.

35 Tarihi: Alicia Castillo Holley

Masu kirkire-kirkiren dake da fasaha ta musamman na iya sa abubuwa su tabbata.

37 Sirri Hudu na Kirkire-kirkire

Daga Alex Soojung-Kim Pang, Darektan Bincike na Cibiyar Nazarin Harkokin Nan Gaba.

Manyan Goben Masana Harkokin Kimiyya da Kasuwanci na kara sanin yadda ake hada kai game da kirkire-kirkire, fiye da da.

44 Tairhi: Rael Lissoos

Mai kirkire-kirkire na iya hade abubuwa uku wuri guda, su yi aiki.

Hadin Kan Gwamnatoci da Kamfanoni Masu Zaman Kansu.

46 Kirkiro Da Kananan Harkokin Kasuwanci: Nauyin Da Ya Rataya A Wuyan Gwamnati.

Daga Charles W. Wessner, Darektan Fasaha da Kirkire-kirkire da Harkokin Kasuwanci da Jami'o'in Kasa.

Hadin gwiwar gwamnati da kamfanoni masu zaman kansu ne ke taimaka wa kananan harkokin kasuwanci sayar da kayayyakinsu a kasuwanni.

51 Kididdigar Rukunonin Kirkire-kirkiren Duniya.

55 Alakar Gwamnati da Kirkire-kirkire

Daga James P. Andrew, Babban Jami'in Hadin Gwiwar Kamfanin Kungiyar Kwararrun Boston

Manufofin gwamnati na kwarai na da kwakkwaran muhimanci ga kokarin tabbatar da kirkire-kirkiren kamfanonin ciki gida.

61 Tarihi: Michael Bremans

Makirkiri a Kasar Belgian ya bullo da hanyar cin sahihiyar riba.

63 Mallakar Ayyukan Basira da Kirkire-kirkire

Daga Michael A. Gollin, Abokin Hadin Gwiwar Kamfanin Venable LLP
Hanya mafi a'ala ta kare mallakar fasaha da basira da hazaka ke inganta harkokin Kirkire-kirkire, game da daidaita haƙki da yadda za tafiyar da shi.

68 Karin Bayanai

Mutane da Wurare Menene Kirkira?

Daga David Nordfors



Fiye da rabin jama'ar duniya na amfani da tarhon tafi-da-gidanka. Wannan wani yaro ne a Kasar Mali ke cajin batirin tarhonsa, daga wutar batir.

Kirkira wata bayyana fasaha ce, tare da gabatarwa, wadda ta fi kamari ga fannonin tattalin arziki da kuma harkokin mulkin gwamnatoci. A halin yanzu, fadada tattalin arziki ba shi ke kawo yalwar yin abubuwa ba, sai dai yalwata sababbin kayayyaki masu inganci. David Nordfors, jami'in hadin gwiwa ne, kuma babban direkstan Cibiyar Nazarin Wallafe-wallafen Kirkire-kirkire, ta VINNOVA, dake Jami'ar Stanford.

A yau, kirkire-kirkire, su suka fi komai muhimmanci wajen inganta ci gabon tattalin arzikin. Ya kuma danganci da irin yanayin da suka samu, wajen tallafa wa harkokin kasuwanci a tsakanin tafarkin na tattalin arziki da

‘yancin tabbatar da basira. Masu wayo, wajen tsara manufofi, sun fahimci irin bukatar dake akwai ta tallafa wa wannan “yanayin na gudanar da Kirkire-kirkire”.

Kirkira na haifar da wani abu sabo. Hasali ma, kirkira ta wuce haka, domin ta kan kirkira tare da gabatarwa. Akwai wuya wajen gabatar da wani abu sabo. Duk kuma wanda yake da kaifin basira game da yadda zai inganta wani aikinsa, ya san haka.

Jama'a kan ce suna son ci gaba, amma su kan yi kekkega ga rungumar canjin al'amari. Kasashe da kuma fungiyoyi sun yi turjewa, fiye da mutanen dake cikinsu. Koda kuwa dukan jama'ar dake cikin wata fungiyar suna da bukatar canjin, da wuya ka ga cewa sharusdan fungiyar sun amince da su karbi canjin.

Tabbatar da Kirkire-kirkire wata dabara ce, yayinda gane yadda take tabbatar yake kimiyya. Tun fil-azal, akwai Kirkire-kirkire a cikin tunani da al'adun jama'a, kamar yadda suke a cikin kimiyya da fasaha.

Amma yanzu sai kara gogewa muke yi, game da Kirkire-kirkire, yayinda sukan abubuwan da suke haifarwa sai kara inganta harkokin rayuwar jama'a suke yi, a duk wani lungun dake kasashen duniya.

Bangarorin kasashe da dama sun mayar da akalarsu ga tattalin arzikan Kirkire-kirkire, yayinda sauran ke hanzarin kamo su.

A al'adar harkokin tattalin arzikan dake yin kayayyaki, yawan kayayyakin da ake yi, shine ci gaba, wajen karuwar kayayyakin da ake yin. Dukiya dai ba ta wuce noman alkama da gina gidajen da suka dacewa zaman jama'a ba, ko kuma bude karin masana'antu, fiye da na bara. Amma a tattalin arzikan Kirkire-kirkire, ci gaba shine karin yawan sababbin kayayyakin da aka yi bana, fiye da bara. Wannan shine harsashin ci gabon da jama'a za su gani da idanunsu, a dukan fasin duniya da rayuwarsu ta yau da kullum.

Neman Samun Gajerar Nasara

Gaggauta amince yin amfani da tarhon tafi-da-gidanka, ya nuna irin yadda Kirkire-kirkire ke kawo canjin yanayin al'adar zamantakewar jama'ar duniya. A watan Afrilun 1973 aka fara amfani da tarhon tafi-da-gidanka. Bayan kuma shekaru goma, kasashen Sweden da Finland suka fara sayar da fasahar tarhon na tafi-da-gidanka.

Acewar Kungiyar Harkokin Sadarwa ta Duniya, ya zuwa karshen 2008 kuma, jama'a na amfani da wayoyin tarhon tafi-da-gidanka fiye da miliyan dubu hudu. Yawansu kuma ya kai fiye da rabin jama'ar dake duniya! Idan kuma ka danganta wannan da yak'i da jahilci, sai ka ga cewa, yau shekaru dubbai ke nan da kirkiro hanyar koyon rubutu, amma sai ga shi cikin 'yan shekaru kalilan, fiye da rabin jama'ar duniya sun yak'i jahilci. Yaduwar da wayar tafi-da-gidanka ta yi, ta rubanya yak'i da jahilci, au daruruwa barkatai!

Ta yaya wannan canjin ya zo, haka gagab? Sirrin al'amarin yana ga irin yadda aka mayar da hankali ga kirkire-kirkire, maimakon mayar da hankali ga kara yawan kayayyakin da ake yi.

Idan da kuma masu sana'ar sayar da wayoyin tafi-da-gidanka ba sufafata da juna ba, wajen tsere wa juna, ga gabatar da wadansu sababbin kirkire-kirkiren ba, da yanzu wayar tarhon tafi-da-gidanka, sai wane da wane, ko kuma sayen batirorinsu sai masu hannu da shuni. Da kuma jama'a, da dama, ba su mallake su ba, a yau.

Gasar gabatar da wata sabon sanfurin kirkira, tsakanin kamfanoni ta dakushe al'adar salon kasuwan kamfanonin, na da. Yanzu dukan kamfanin dake hankoron samun nasarar kasuwancinsa, dole yake bambanta harkokin bincike da bunkasar harkokin kasuwanci. Kamfanoni na hakikancewa ga kauce wa kashe kusade wajen harkokin binciken da ba su da wata nasaba da yadda suka tsare harkokinsu na kasuwanci. Zuba babban jari wajen inganta harkokin fasahar da bai tsinana komai ba, ga kusaden dake shigowa, na iya durkusar da kamfani. Dole inganta harkokin fasaha da kasuwanci su ri'ka tafiyar kafada da kafada. Yau dai, ba ka iya raba cudanyar dake tsakanin jami'an harkokin fasaha da takwarorinu na harkokin kasuwanci.

“Tsararren Tunani”, inda masana fannoni da dama ke zaunawa don dunkule basirarsu a wuri guda, da nufin inganta biyan bukatar mai amfani da kayayyaki da kuma kai turar samun nasarar kasuwanci, na iya maye gurbin al'adar nan da ake da ita, ta zurfafa fayyace tunani, inda kowace fungiyar kwararru ke zama don zurfafa tunini, su kuma aike da sakamakon abinda suka samu ga saura, a matsayin rahoto. Wannan kuma shi ke faruwa a fannin fasahar sadarwa. A yau, ba a tunanin cewa, na'ura mai kwakwalwa da wayar tafi-da-gidanka, ko makamantansu, na iya shafe shekaru biyu, ba tare da an maye gurbinsu da wadansu sababbin sanfuri ba. Hakan ma, ya fi tabbatar ga kayayyakinm na gargajiyar dake shekara da shekaru, irin su kayayyakin abinci da kuma bangaren abubuwan da ake yi da takarda. Kamar yadda bincike ya nuna a Kamfanin Kwararru na McKinsey & Company, lokacin yin amfani da kaya, a yau, ya ragu da kashi daya bisa uku, a cikin shekaru 40 da suka shude. Wannan kuma ya nuna ke nan, an kaurace wa tattalin arziki mai “dimbin karin kayayyakin da aka sani”, ya zuwa tattalin arziki mai “gabatar da wani abu sabo”.

Tunanin Abinda Ke Yiwuwa

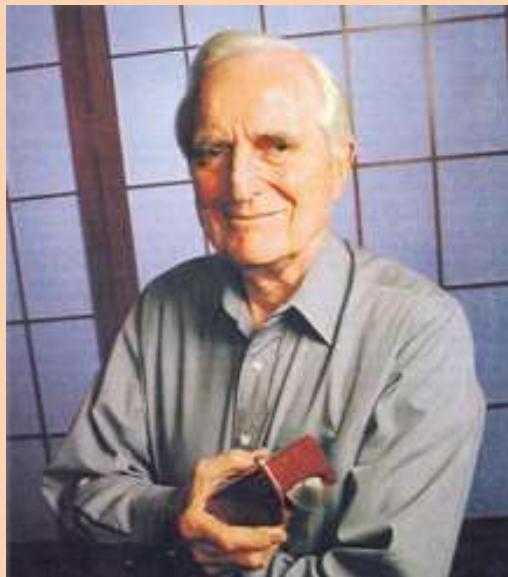
Yayinda kauran jama'a ke da ala'ka da kirkire-kirkiren harkokin fasaha, na zamani, haka kirkire-kirkiren dabaru ke barkowa, wajen inganta harkokin fannoni irin na bayar da kananan rance, game da taimaka wa jama'ar dake fama da tattalin arziki, mai tasowa, wajen kafa sababbin kananan harkokin kasuwanci da kafa kamfanoni da kuma koyon dabarun kasuwanci.

Alal misali, ita kanta wannan Kalmar ta “kirkire-kirkire”, abin alfahari ce, kuma wata madafa, kazalika hanyar haifar da abin alfahari. Tana iya shafar kamar harkar kasuwanci ko kuma “hanyar Kirkira da tabbatar da sababbin abubuwan amfanin abokin ciniki, a kasuwanni”, kamar yadda Curtis Carlson and Bill Wilmot, ya bayar da shawara, a wajen cibiyar binciken harkokin kwangila na SRI International, ko kuma ga harkokin kyautata jin dadin rayuwa, dungurungum. Kirkire-kirkiren harkokin kyautata jin dadin rayuwa da kuma na kasuwanci, na iya cudanya da juna. Kananan rance da kuma sinadarin na’urori masu kwa’walwar da wadansu fungiyoyi, masu zman kansu ke bayarwa, kyauta, irin su Linux ko Firefox Internet browser, na kadan daga cikin irin misalan da ake bayyanawa.

Mutane na danganta kirkire-kirkire da tattalin arzikin duniya, amma, a yau, kananen kirkire-kirkire sai karuwa suke yi, abinda ke sanya tattalin arzikin kirkire-kirkiren na ta fasada a kusan duka fadin duniya. Amma kudi kadan ake bukata, don bullo da sababbin kirkire-kirkire, a kan yanar-gizo.

Dalibai ne suka fara fito da Shafin Yahoo! Shi kuma shafin Google bai ci kudin azo-a-gani ba. Koda za a ce an zuba wani babban jari, sai lokacin da wadannan kamfanoni suka fara hada-hada. Ma’kasudin kafa kamfanonin kirkire-kirkire kuwa, irin su harkokin yanar-gizo, bai da yawa. Hasali ma, ai akwai makudan kusade, a ko’ina cikin duniya, da za a iya kafa irin wadannan kamfanonin.

Saboda irin yadda yanar-gizo ke yaduwa da kuma ingancin da ake samu, wajen harkokin sadarwa, haka kasuwannin duniya ke ta amfani da su. Abu ne, mai sauksi, yanzu wani jinsin jama'a ya fadakar da mutane game da musaya hanyoyi da kayayyakin aikinsu, na da, da na zamani. Akwai kirkire-kirkire, irin na famfon ruwa, da sababbin hanyoyi da ba su cin kudi, don inganta harkokin noma da kuma sababbin hanyoyin tsara kiwon lafiyar marasa lafiya, har a cikin kauyuka.



Doug Engelbart ne, rike da wani dan karamin linzamin sarrafa na'ura mai kwakwalwa.

Wannan shine muhimmancin harkokin kirkire-kirkire, masu ban mamaki, wajen rage yawan kudin da ake batarwa. Ka dubi Kwarin Sinadari na Silicon Valley, dake yankin California, wurin da ya shahara wajen kirkre-kirkiren da ba su gurbata yanayi, kuma ddaya daga cikin wuraren da duk duniya ta dogara da shi, game da musayar ra'ayoyin al'amuran fasaha da kire-kire.

A nan ne, a cikin 1968, Doug Engelbart ya fara kirkiro wani linzami don sarrafa na'ura mai kwakwalwa ta zamani. Wannan kuma shine masomin linzamin sarrafa na'ura mai kwakwalwar da ake amfani da shi, a yau. Shine kuma ya fara gabatar da yin amfani da linzamin rubuce-rubuce da magana da mutum yana ganinka a na'ura mai kwakwalwa da wasiñ yanar-gizo da kuma kalmomi masu kalkala. (Akwai ma wannan gwajin, a sharing yanar-gizon YouTube, (“fagen da ya haifar da dukan shafukan yanar-gizo”). Engelbart bai kira wannan gwajin “wata sabuwar na'ura mai kwakwalwa ba.” Maimakon haka, sai ya lakaba mata suna “cibiyar binciken fadada tunanin dan adam.” Engelbart bai kirkiro wannan na'urar don ta zarce dukan na'ura mai kwakwalwa ba, sai don jama'a, masu basira. Abinda ya rage shine, a hada wadannan na'urorin da juna, don jamaa su yi aiki da su, wajen warware matsalolinsu. Suna iya zama wata gidauniyar hazakar jama'a dake iya magance matsalolin da jama'a ba su iya warwarewa, ba tare da sun yi amfani da na'urorinsu, masu kwakwalwa ba. A dalilin shafukan yanar-gizo da wayoyin tafi-da-gidanka, wadanda wadansu kananan na'urori masu kwakwalwa ne, da saukaka gudanar da harkokin jin dadin rayuwa, sai mu ce, a yau, hakarmu ta cimma ruwa.

Saduwar Jama'a

A yanzu mun fara gane cewa kirkire-kirkire da tarin hazañar jama'a, dan juma ne, da dan jummai. Dukan mahalukin dake da hazañar ko basira, na iya kirkiro wani abu, shi kansa, ko kuma tare da sauran jama'a. Haka kuma duk wani jinsin jama'ar dake da basira, na iya kirkiro abubuwa. Amma sada jama'a ba ta taso ba a nan. Mañasudin al'amarin shine fadakarwa game da yadda aka kirkiro abin. Wannan kuma wani hañki ne da ya rataya a wuyan 'yan jarida, fiye da kowa.

Idan suka fadakar da mai karatu game da irin yadda aka kirkiro al'amarin, to, dole, a samu karuwa ga sanin yadda al'amarin ke aiki. Amma muddin 'yan jaridu ba su fahimci yadda aka kirkiro abin ba, to, za su yi wa taron jama'a mummunar fassarar al'amarin. Daya daga cikin sakamakon wannan shine, suna iya dakushe hankoron makirkirin wannan na'urar, ko kuma su kidimar da jama'a game da yin kyakkyawan amfani da ita. Cibiyar Nazarin Harkokin Watsa Labaran Kirkir-kirkire ta VINNOVA, dake Jami'ar Stanford, ta gayyaci manema labarai da masu bincike, daga kasashe da dama, da su zo Stanford, don inganta kwarewarsu wajen yayata yadda aka kirkiro wani al'amari. Wannan bitar na iya taimaka wa manema labarai, yayata yadda za a kara kaimin gudanar da harkokin basirar jama'a, ba tar da an gurbata yanayin kasashen ba.

Kirkire-kirkire na bukatar jari, kuma suna bukatar yanayin da zai taimaka masu, irin wanda zai kyautata harkokin kasuwanci da kufade, ko malamai da masu kula da canjin yanayin yadda harkokin kasuwanci da kirkire-kirkire za su yalwanta. A duk lokacin da aka kirkiro wani abu, to, da wuya ba samu kamfanonin dake da tunani da abokan hadin gwiwar da ba za su tallafa ba, don gina kamfanoninsu, a wani lokacin ma, don bunkasa karamar hajar da za ta mamaye kamfanonin kasashen duniya.

Wannan kuma shine hankoron dukan wanda ke Kwarin Sinadari na Silicon Valley. Kirkire-kirkire shine kashin bayan wannan masana'anta. Kirkire-kirkire shine kan gaba a tattalin arzikan Kasar Sweden, tunda har wata hukuma gwamnati na kafa, musamman, don inganta kirkire-kirkire, na masu kyau.

A hakikanin gaskiya ta fi mayar da hankali wajen karfafa kyautata yanayin na kirkire-kirkire, fiye da tallafa wa kirkiro wani al'amarin.

Hadarin Dake Boye

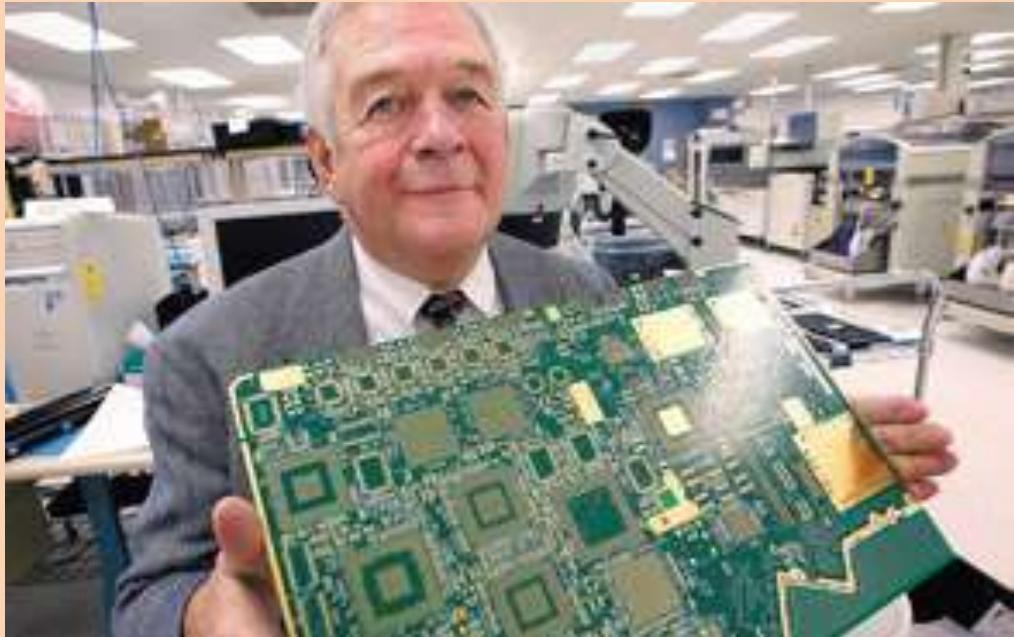
Rashin gamsuwa,a yau, shine abinda ke ci wa, harkokin kirkire-kirkire, ya-Allah na kayayyaki ne, ko kuma basira, tuwo a kwarya, a tattalin arzikan kasashen duniya, mai kama da wannan. Rashin kai wa ga biyan bukata yana da yawa. Abu ne, mai sauñi, ka fada cikin hadari, wajen koñarin kirkiro wani sabon abu. Wannan shi ya sanya jama'a da dama ke kin yunkurawa.

A 1847, wani masanin harkokin kimiyyar lafiyar jama'a, dan Kasar Hungary, Dr. Ignaz Semmelweis, ya gano cewa, ana iya rage yawan kamuwar yara da zazzabi, idan likitoci na karbar haihuwar jarirai da wankakkun hannuwa. Semmelweis ya kokarta magance kamuwar zazzabin yara, wanda a da, cikin mata 10 da suka haihu, sai jariri daya ke mutuwa, a wajen haihuwa. Ya kuma gabatar da wata kididdigar da ta nuna cewa, ba shakka, wanke hannuwa na ceton rayuka. Amma sai likitoci suka ki amincewa da fadarsa, domin wannan binciken ya zo ne, kafin Louis Pasteur ya tabbatar da cewa, akwai kananan kwayoyin dake sa cuta. Kuma babu wani hasashen da ya gasgata sakamakon binciken na Semmelweis. Wadansu likitocin suka ji kamar an muzanta su ne, idan aka ce su wanke hannuwansu. Semmelweis ya ci gaba da fusata abokan akinsa, dake neman su zolaye shi. Wannan kuma ya sa Semmelweis ya rasa akinsa da mutuncinsa.

Irin wannan hadarin, dake shafar masu kirkire-kirkire, a tattalin arziki, mai kama da wannan, yana faruwa ga shugabannin siyasa. A littafin da ya wallafa, a 1513, mai suna "Yarima" (*The Prince*), Nicolo Machiavelli, ya bayyana hanyoyin da dan sarki zai bi, wajen gadon mahaifinsa, ko kuma wanda ke kan gadon sarautar ya ci gaba da mulki. Ji abinda yake cewa:

Dole mu yi imanin sanin cewa, a wuncan lokacin, babu abinda ya fi wuya da hadari da kuma raunnar nasara, irin ka yi kokarin gabatar da wani abon abu, a kowace gwamnati. Duk wanda ke cin gajiyar wani tsohon abu, dole ya fulla gaba da wanda ya bullo masa da wani sabon abu, yayinda wadanda ke ganin za su amfana da sababbin al'amuran, ke yi wa al'amarin daukar sakainar kashi. Wannan bambancin na faruwa ne, a tsakanin tsoron damar da doka ta bai wa masu kin al'amarin, wani fannin kuma, a fakaice, shine saboda sharrin mutumin da ba shi da imanin amincewa da sababbin dokokin da za su kalubalance shi, yayinda wadansu, a tsorace, za su yi yunkurin goyon bayan sabon al'amarin

Nace wa tsohuwar al'ada, bai da wani tasirin da zai tumbuke sabon abu, game da samun nasarar harkokin siyasa da tattalin arziki. Kungiyoyin dake dakatar da bayyanawa ko hana jama'a, namiji ne ko mace, karami ne ko babba, sanin wani labarai, na hana bayar da gudunmawar zamantakewa, ko kyautata jin dadin rayuwar tattalin arzikin kasa, wajen yin gasa da tattalin arzikin kirkire-kirkire, a kasashen duniya. Kas ashen Korea ta Kudu da India da Isra'il, na cikin kasashen da tattalin arzikinsu ke bunkasa ta wannan dabarun.



Wani makirkiri ne, na yankin Virginia, Joc T. May, ke nuna daya daga cikin kirkire-kirkirensa na wata na 'urar dake kunna injin motarsa, da zarar karar agogo ta mutu.

Gwanancewar Canji

Kaurace wa wata al'ada, ya zuwa ga tattalin arzikin kirkire-kirkire, na bukatar cikakken canjin harkokin rayuwa, da rungumar sabuwar al'adar da kuma sadaukar da kai wajen inganta basira da dama, dake bukatar haifar da jinsin masu kirkire-kirkire. A da, makarantu na koyar da yara ne, hanyoyin da za a warware matsaloli, hanyoyin dake taimaka ma su, yin tunani. Amma, a yau, makarantun, suna taimaka wa yaran ne, game da gwanancewa a kan sanin makamar duk wani canji, ko gano sababbin matsaloli da binciko abubuwan dake warware su.

Maimakon taimakawa, bai daya, tattalin arzikin kirkire-kirkire na taimaka wa tunani da yawa ne, da kuma hazikanci. Dole bankuna da masu zuba jarurruka su sake bincikar irin hadarorin da suke fuskanta, don daidaita bude wadansu kafofin ayyukan kirkire-kirkire. Masu zartas da shawarwari suna mayar da hankali ne ga kayyade harkokin kasuwacin dake yin kayayyaki, iri daya, da yawa, da su sake dukufa a kan yadda za su kara samun galaba, wajen barin sababbin kayayyaki na maye gurbin tsaffi.

Duk al'amarin ya ta'allafa ne, ga wane irin abu zai fito, maimakon mayar da hankali ga kara yin kayayyaki, iri daya. Inganta kirkire-kirkire shine ingancin basirar da muke da ita. Kuma babbar dama ce, ga duk masu zartas

da shawarwari, ya-Allah wani kamfani ne, dake kakkafa masana'antu, ko kuma shugabannin siyasar dake tafiyar da harkokin kasashe.

Ba dole ba ne, ra'ayin da aka bayyana a wannan kasidar, ya zama daya da ra'ayi ko manufofin Gwamnatin Amirkha.

Tarihin Kirkire-kirkire

Jeff Bigham

Jami'in Nazarin harkokin kimiyyar na'ura mai kwakwalwa na iya gano hanyar da yanar-gizo za ta amfani, hatta makafi da masu dundumi.



Jeff Bigham

Shafin yanar-gizo na neman ya gagari d'aukacin mutane miliyan 38, dake kokarin sani, ko kuma amfani da shi, a fadin duniar nan. Abinda ya rage shine a bude wa jama'a "allon karatu", wani linzamin da zai rika karanta rubutu, a bayyane, a kan allon, ta yin amfani da amsa-kuwwar na'ura mai

kwakwalwa. Amma allon rubutun yana da tsadar da har manyan dakunan karatu da jami'o'i, na ganin asarar kashe dolar Amirka dubu daya, wajen sayensa don kafawa. Wannan ya nuna ke nan, jama'a da dama, ba za su ci ribar wannan damar ta sharing yanar-gizo da aka ba su ba.

Bukatar Jeff Bigham, ita ce ya canja wannan al'amarin. A yanzu, Bigham, wanda mataimakin shaihin malami ne, a fannin kimiyyar na'ura mai kwakwalwa, a Jami'ar Rochester dake Birnin New York State, ya kirkiro da wata na'urar da ba ta da wuyar sarrafawa, kyauta, don amfanin makafi.

Makahon na iya shiga shafin yanar-gizon Bigham, mai suna WebAnywhere, inda daga nan, yana iya shiga kowane shafin yanar-gizon da yake bukata, da za ta karanta masa abinda yake son ji. Makahon ma, na iya ragaitarsa cikin yanar-gizo, ya budo, ko kuma ya umurci injin, da ya karanta ma sa duk wani shafi, tun daga farko har karshe.

Matsalar wannan aiki na Bigham, ita ce, lokacin da na'urar ke dauka, daga tsakanin lokacin da mai amfani da ita, ya miša bukatarsa da kuma lokacin da za ta fara karatun.

Bigham ya fada wa mujallar MIT, mai suna *Technology Review*, cewa, “Akwai kyakkyawar niyya, sai dai daukar lokaci, tsakani sa'ad da mai yin amfani da na'urar ya matsa ta, da lokacin da za ta yi masa magana”.

“Hakika, kusan kowa na tunanin cewa wannan matsalar ta kutsawa cikin shafukan na yanar-gizo, na iya dakushe zimmarmu.” Amma al'amarin haka ba ne. Bigham ya kuma kirkiro wata dabarar da za ta yi has ashen wane irin shafi, mai amfani da na'urar zai so ji.

Alal misali, bayan ka zakulo sabon shafi, kamar nytimes.com, na'urar na iya hasashen mai amfani da ita, zai karanta manyan kanun labarun shafin ne, da kuma sauran labarun. To, a wannan lokacin sai ta hanzarta loda masa maganar wannan bangaren na shafin. Lokacin kuma da mai amfani da na'urar ya zabi, daya daga cikin kanun labarai, sai dandanan ta fara karantawa. Wannan sauకăkar hanyar shiga yanar-gizon ta makafi, ta maye gurbin mawuyaciyar da ake da ita, a da. Bigham na bukatar kawo canji, duniya, don haka bai kula da irin ribar da zai samu ba. Shi ya sa ya sanya aikinsa, kyauta, ga dukan mahalukin dake bukatar yin amfani da shi.

Sai godiya ga wannan hazikanci na Bigham da kuma sauran gudunmawar da za ta biyo baya. Su kam makafi tauraruwarsu ta fara sheki, abinda wani mawallafin littafi, mai suna “Mafarin Rayuwata” (*My Start-Up Life*), Ben Casnocha, ya bayyana da cewa: Yaro da garin da ya zama shugaban da ya koyi rayuwarsa ta hannun Kwarin Sinadari na Silicon Valley.

Ba dole ba ne, ra'ayin da aka bayyana a wannan kasidar, ya zama daya da ra'ayi ko manufotin Gwamnatin Amirka.

Al'adar Kirkire-kirkire

Daga Rocco Leonard Martino



Baki ne zagaye da wata taswarar wani tsibirin da za a cike teku, domin gina wa masu yawon shakatawa, a Kasar Dubai. Wannan na daya daga cikin wuraren dake Yankin Tekun Gabas ta Tsakiya, inda aikin kirkire-kirkire ya bayyana.

Al'adun dake sanya mutane yin hasashe, da kirkire-kirkire da kuma yin abubuwa ne zakaru, a duk wata gasa game da cin gashin kan harkokin tattalin arziki. Daga Shugaba, kuma wanda ya kafa Kanfanin CyberFone Technologies, Rocco Leonard Martino.

Kafin juyin juya-halin bunkasar harkokin masana'antu, kusan kudaden aunakar ma'aikata da kuma na kasashe, bai taka kara ya karya ba. Alal misali, kudadem da manomi ke samu kusan dukun daukacin kasashen duniya, a 1750, bai da wani bambamci da irin wadanda kakanin kakaninsa ke samu. Amma tun daga farkon Karni na 19, sai ga shi wadansu kasashen na samun canji. Ba a Ankara ba, sai yawan kudaden da wadansu kasashen ke samu ya yi tashin gwauron zabo, amma sauran, kamar an shuka dusa. To,

me ya kawo haka? Daya daga cikin amsoshin da za a bayar shine sababbin dabarun fasaha sun bude kofar samu da kuma yalwatar duniya. Wata kwakkwatar amsar kuma ita ce, wadansu jama'ar sun rungumi ilmi da canjin zamani, wannan kuma ya sa budewar hanyoyin fitowar masu kirkire-kirkiren da suka yi kukan-kurar tabbatar da ganin biyan bukatar hasashensu, amma ba haka kawai jama'arsu suka arzurta ba. To, su wadanna kasashen da suka yi ko-in-kula sun yi watsi ne da wannan damar, ko banzata irin damar da ta tarar da su, ko kuma yayanin tsantsani bisa aiwatar da al'amurra ne ya ya ci dununsu?

Amirka ta dade, tana jagorancin kirkire-kirkire da kuma aiwatar da su, wajen kawo yalwar arziki.

Ana iya gardamar cewa, abinda ya sa, ba zai rasa nasaba da shirin yalwata arzikin kasa (DNA) ba. Daya daga cikin wadanda suka bude wa kasar idanu, Benjamin Franklin, shi kadai ya kirkiro yin amfani da zafafa karfe, don samar da makamashi, irin su murhun Franklin da kunna wuta daga karau, mai kauri, ko kuma bututun tsotse mafitsara.

(Kodayake Franklin bai kirkiro wadannan abubuwan don ya yi kudi, amma wadansu kamfanoni sun yi amfani da basirar ta sa, don yin kudi.)



A 1946, aka Kirkiro da na 'ura mai Kwakwalwa, da aka sa wa suna ENIAC, a Jami'ar Pennsylvania.

A cikin 'yan shekarun nan, tattalin arzikin kasashen dake gaba da Tekun Pacific, kama su Hong Kong da Singapore da Taiwan da Korea ta Kudu da kuma Japan, sun yi amfani da irin wannan basirar. Kai, hatta Kasashen

China da India, sun kirkiro hanyoyin samun makudan kudsade, wanda ya sa su jan ragamar harkokin tattalin arzikan duniya. Kazalika kasashen dake Kungiyar Kasashe Masu Arzikan Man Fetur, (OPEC) sun kudance, amma mafi yawansu ba su nuna wata basirar kirkiro wani abu ba, ko kuma ba su tallafa, matuka, ba, ga fadada harkokin tattalin arzikan kasashen duniya. Babu kuma dalilin da zai sa a ce, irin arzikn da wadannan kasashen ke da shi, ba zai yi wata nasaba ba, wajen sababbin harkokin zuba jari, ko inganta harkokin kirkire-kirkire.

Wadansu gwamnatocin yankuna, irin su Kasar Dubai, wadanda ke narkar da kudsade wajen zuba manyan jarurruka da harkokin shakatawa, da kuma Kasar Saudi Arabia, wadda Jami'ar Sarki Saud ke da dalibai dubu 70, suna sane da irin wadannan matsalolin.

A yankin Kudancin Amirka kuwa, Kasa, kamar Brazil, ta yi fice, inda ta yi rawar-gani wajen yin amfani da kirkire-kirkiren zamani, a cikin gida, da kuma sayar wa kasashen waje.

Ba Amirka ba ce, ta bullo da basirar yin kirkire-kirkire da kuma aiwatar da su, amma za ta ci gaba da yalwata su, fiye da wadannan kasashen da muka bayyana sunayensu. Kusan a ko'ina, kodayake, akwai kunnowar kan kyawawan yanayin ra'ayoyin dake son gudanar da kirkire-kirkire, da halayyar jama'a da manufotin da za su kalubalanci al'adu, da basirar mutane da kuma irin tallafin da gwamnatoci ke bayarwa, wajen aiwatar da sababbin manufofi.

Yadda Al'adu Ke Shafar Kirkire-kirkire

Ta yaya al'adu ke shafar harkokin kirkire-kirkire, ko kuma yadda kirkire-kirkiren ke shafar al'ada? Al'ada da kirkire-kirkire, 'yan uwan junna ne. Kirkire-kirkire ba za su taba yin tasiri ba, idan al'adu ba su amince yin su ba, amma da zarar an kirkiro su, to, dole su tafi tare, domin daya ba ya yi, sai da daya. Kuma tarihi ma ya sha nuna ma na irin haka. Ko a zamanin duniyarmu, ta yau, inda fasahohin harkokin sadarwa da watsa labarai, ta yanar-gizo, ke sheke ayarsu, akwai alaka, a tsakanin kirkire-kirkire da al'ada.

Bugu da kari, fitowar wayoyin tarho, na zamani, ya-Allah na tafi-da-gidanka ne, tare da wadsanda ke da na'urori masu kwa'walwa, shiga yanar-gizo, a cikinsu, ta bude kafofin sabunta ra'ayoyi, da samu safonni, farat daya, da kuma maye gurbin al'adun da, da na zamani. Haka dabi'un jama'a, game da karatu, ya wuce na jaridu da litattafai, ya zuwa ga sanin gundarin gaskiyar al'amari, ko kuma wani ra'ayi.

Yanzu kuma shafukan *Twitter* da *micro-blogging*, sun wuce sanin bayar da sakamakon wata tantaunawa, ko wasika, wadda, a da, ake aikewa ta wasikar yanar-gizo. Na'urar yanar-gizo, yanzu ta takaita dogon lokacin da ake dauka

wajen sanin duk wata shawarar da aka yanke da yadda ake yada masaniya, don karin sani. Samun labarin abinda ke faruwa, a duniya, nan take, ya zama wata hanyar da za a iya sa jama'a sanin ra'ayoyi da manufofi, game da komai, yayinda kuma take iya zama wata hanyar juya wa jama'a halayar. Yadda ake sanin al'amurra, kamar walxiya, ya shafi harkokin ilmi, da sanin ra'ayoyin jama'a da kida da wake-wake da dai sauransu, da kuma inganta harkokin aladu.

A mafi yawan fadin duniyar nan, al'adar da jama'a suka fi sani, ba ta wuce ta su ciyar da kawunansu ba, ko kade-kade gargajiya. A yau kuwa, yanayi ne ke sarrafa irin yadda al'ada za ta kasance, da kuma irin yadda za a tafiyar da ita, kazalika da yadda al'adar wadansu mutane take da alaka a fannoni da dama. Wannan alakar na iya zama ta ilmi, ko addinai, ko dangantaka, ko jinsi, ko yanki ko kuma kabilia. Ita kuma al'ada ta kan zama kashin bayan aiwatar da basirar wani mutum, ko kuma jinsinsa.

Kirkire-kirkire shine tushen wanzar da wani sabon abu, ko da kuwa waka ce, ko wallafe-wallafe, ko shukar furanni, ko sulkullen lissafi, ko ci gaban samar da magunguna, ko kuma firkiro wani abu. A mafi yawan 'yan lokuttan nan, an fi mayar da hankali ga harkokin fasaha, don zama wani jigon kirkire-kirkire. Hakan kuwa na faruwa ne, da dama, a sakamakon dimbin dukiyar da aka samu a duniya, a cikin kamar Karni shida da suka shude, tun lokacin da aka firkiro gama-garin na'ura mai amfani da kwakwalwa, a 1946. A dalilin gagarumar nasarar da aka samu game da harkokin sadarwa, da kuma nuna hotuna, na'ura mai kwakwalwa ta haifar da wani gagarumin ci gaba, ga samun arziki, wanda kuma ya haifar da kakkafuar sababbin masana'antu, har a wuraren da ba taba mafarkin za su ta iya bunkasa ba. Misalan irin wadannan masana'antun sune na kayayyakin na'urori masu kwakwalwa dake kasashen Singapore da Taiwan, da kuma na firkirowa da inganta sinadarin na'urorin a kasashen Ireland da Philippines. Bugu da kari, akwai kuma harkokin ci gabon da suka fasada tattalin arzikin kasashen dake da manyan masana'antu, irin su China da India da kuma Japan.

Wannan ci gabon ne ya zama harsashin da komai ya ginu, inda wata kirkirar ke haifar da wadansu, ba iyaka, da suka dogara da al'adun da suka rungumi ilmi da canjin zamani. Shekaru arutan ke nan, ake kokarin gano sauкаkkun hanyoyin hanzarta yin amfani da na'urori, wajen kammala tafiyar da ayyuka. Injunan kanikanci da harkokin wutar lantarki, duk sun samo asali ne daga irin wadannan na'urorin na zamaninsu.



Jami'ar Sarki Saud, na cikin wadanda ke hankoron abka wa cikin al'adar Kirkire-kirkire.

Dukan injuna da kayayyakin wutu lantarkin masana'antun da aka kera, a zamaninsu, sun dauko asali ne daga irin na'uorin da suka yi zamani da su. Tun lokacin da aka Kirkiro kwan lantarki da yin amfani da shi ne, kadai, aka samu damar sanin makamar da aka Kirkiro na'ura mai amfani da wutu lantarki ta farko. Na'ura mai kwa'kwalwa ce masomin gina tauraruwr dan adam, wadda ta haifar da hanyar sadarwa ta zamani. Kuma wannan masaniyar ce, tare da tabarmar kayayyakin lantarki, suka haifar da telebijin da kayayyakin dauka da nuna hotuna, na zamani, da suka suka daidaita duk wata dababar aikewa da sakonnin da, a yau, muka fado cikin zamanin yanargizo.

Ba kuma gamo-da-katar ba ne, ya sa abubuwa suka zama musababbin kera na'ura mai kwa'kwalwa, ta zamani, a Amirka, a kamar shemaru 70 da suka wuce, abinda ya sa aka raja'a da muhimmancin yankin Kwarin Sinadari, (Silicon Valley) dake California.

A can ne, dandalin da jama'a da basira da hazaka ke rikida don sanya kayayyakin da aka kera su yi aiki.

Yau kuma, ga mu a lokacin da wani marubucin jaridar *New York Times*, Thomas Friedman, ya bayyana da cewa, "shimfidaddar duniya", Idan ma

har ba shimfisaddar duniyar ba ce, to, babu shakka, dai ba ta kwarin da ake samun wata tangarda ga harkokin sadarwa da bayyana wa duniya irin kirkire-kirkiren da ake da su da kuma yadda ake karfafa wa jama'a gwiwar Kirkiro da abubuwan jin dadi da kyautata rayuwa.

Rungundumi

Ko a Kwarin Sinadarin na Silicon Valley, ko kuma yankin Bangalore dake India, ko kuma duk wata cibiyar kirkire-kirkiren dake duniya, ba kowa bane ke da basirar kirkiro wani abu. Masu kirkire-kirkiren, wadsansu mutane ne, masu cike da hasashe, da kuma karfin zuciyar ganin hasashen na su ya tababbata. Wannan shi ake nufi da "rungundumi", wanda ya hada da hankoro da kuma burin tabbatarwa da samun nasarar yiwar al'amarin da ba za a halitta ba, sai dai a yi ta renonsa, da kiwonsa, ya-Allah wanda ya shafi fasaha ne, ko harkokin magunguna, ko zane-zane, ko kuma aikin noma. Babban matakint samar da yanayin aiwatar da kirkire-kirkiren, ya funshi fasada damar samun ilmi da kayayyakin koyarwar, da bayar da kudin tallafin yin kirkire-kirkiren, kazalika da kawai da duk wani tarnakin amincewar da kirkire-kirkiren, da kuma kashe kudin yayata kayayyakin da aka kirkira.

Karamin ta'adiri, sa a dubi yadda ake wallafa wa'ka. Muddin kuma ana bukatar samun nasarar yin hakan, sai an samar da wata cibiyar dake koyer da masu wallafa wa'ko'kin da irin kidan da zai bi wa'ko'kin, da taimaka wa masu wallafa wa'ko'kin da kudin d'aukar wa'ko'kin a faya-fayai da kariyar dokar mallaka, don magance satar basirarsu, kazalika da tabbatar da bayar da kudin da za su rera wadsannan wa'ko'ki, a fage.

Wani Kwarin gwiwar da ake samu, mai abin al'ajabi, shine cewa, mafi yawan sababbin hanyoyin fasahar ne, ke taimaka wa ci gaba da kirkiro wadsansu abubuwan, wani juyin wainar dake dagewa ga tabbatar da duk wani alkawarin da aka yi, na bullo da sababbin kirkire-kirkiren, a duniya. Kafin fitowar wayoyin tarhon tafi-da-gidanka, idan za a aike da sa'ko zuwa wuri mai nisa, sai an sha bakar wahalar da za ta fi karfin kananan kasashe. Amma yau sai ga an samu sau'kin da har ake kakkafa turakun wayoyin na tafi-da-gidanka, maimakon fulle-kullen wayoyi. A sakamakon haka ne kuma, miliyoyin masu son kirkiro da abubuwan da, watakila, da ana iya zagaye su, yau, sun samu karfin gwiwar shiga sahun tagwarorinsu.

Yanar-gizo

Fitowar yanar-gizo da wayoyin tafi-da-gidanka, masu arha, ko kuma wadsansu sau'kan kafofi, a kasashen duniya, masu tasowa, sun canja fasalin harkokin ci gaba a duniya. Ba kuma dole ne, a ce kasashen Afrika da Indian ko Chinese, su zama kamar kasashen Turai da Japan ko Amirka ba.

Ma'ana, a nan, ita ce, jama'ar duniya, da dama, na iya aikawa da sakonninsu, ko da kuwa wane lungu suke.

Wayoyin tafi-da-gidankar da ake da su, yanzu, sun zarce rabin yawan jama'ar dake duniya, ko ma fiye da haka.

Wayoyin tafi-da-gidankan, sun zama ruwan dare, wajen harkokin sadarwa, da nishadi da sanin abinda duniya ke ciki, kazalika da harkokin ilmi. Kowa na iya tantancewa da kididdige dukan irin bayanan da ake cusawa, cikin na'urori, da kuma bankunan dake duniyar nan, daga ko'ina, ko kuma kowane lokaci. Wannan kuma ya sanya tamkar duniyar tana a kan dan yatsa ne.

Idan aka duba, sa'ad da ake zaman "Dar-dar", lokacin da ake amfani da fasahar aikewa da sakonnin radiyo, a dukan kasashen duniya, lokacin da Kasar Rasha ke katse wadannan sakonnin zuwa kasashen Turai, sai a ga cewa, yanzu wannan al'amarin, ko kusa ba zai yiwu ba.

Duk kuma wani yunkurin da aka yi, na sanya wa harkokin yanar-gizo da kai da komowar wayoyin tarhon tafi-da-gidanka, takunkumi, ba zai cimma nasarar da ake bukata ba. Babu makawa, watsa labarai da musayar ra'ayoyi da basira, wadanda sune cibiyar kirkire-kirkire da nasarorin da ake samu a kirkire-kirkiren, su ci gaba da fadsa.

Haka kuma ba za a taba samun nasarar turke dukan harkokin kirkire-kirkire ba, don hana ma su bunkasa. Alal misali, ko wadanda ke kirkiro da kade-kade, ko wallafe-wallafen litattafai, ko rawa, kan nemi kwater 'yancin wannan basira da suka mallaka, amma dukansu na amfana da hanyoyin fasahar na zamani. Da dama daga cikin masu wallafa kade-kaden, sukan yi amfani da sinadaran sarrafa na'urori masu kwakwalwa. Kuma fasahar ta zamani na taimaka ma su, ba kadan ba, wajen tallatawa ganin jama'a sun so basirar ta su. Yanzu ba a bukatar tarin makada, wai don za a yi faifai, bayan ga sauksi nan, ya samu, daga irin su yanar-gizon YouTube ko makamantansu. Al'ada da kirkire-kirkire na cudanya da juna. A duniyar nan kuma, babu wani tarnaki, ga tabbatar da abinda ake tsammanin ba zai yiwu ba, sai dai ko abu daya, watau idan kasance dole wanda zai kirkiro abun, bai samu taimako ba, da kwarin gwiwa, ko kuma dama.

Ana samun ci gaban al'adu da kirkire-kirkire ga kasashen dake taimaka wa jama'a. Wadanda kuma ba su yi, tuni aka ga wallensu.

Kasashen dake bai wa jama'a damar kai wa ga biyan bukatar hasashensu, da kirkire-kirkire da aiwatar da su, kan kai wani matsayi da shaharar da ba a zato, a wannan Karnin na 21. Tona asirin yunkurin danne wani kokarin kirkire-kirkire, (kodayake ba duk ba ne, ake iyawa) da halin cijewar gwamnati da kakalen da babu gaira, babu dalili, na cikin manyan abubuwani da wannan zamanin ke fuskanta. Dukan jama'ar dake girmama wata basira

da kuma irin nasarar da basirar ta samu, to, da wuya ba za su yi fice ba, a sababbin mas’alolin ci gabon tattalin arzikin duniya, yayinda bala’i ke abka wa wadanda ba su da nufin yin hakan.

A bincika litattafnn “The Rise of the Creative Class,” da “Venture Capital Meets Hi-Tech”, na Richard Florida, na watan Mayun 2008, ko yanar-gizon ’<http://www.america.gov/st/econ-english/2008/May/20080513101454jmnamdeirf0.6960718.html>.

Ba dole ba ne, ra’ayin da aka bayyana a wannan kasidar, ya zama daya da ra’ayi ko manufofin Gwamnatin Amirkia.

Tarihin Kirkire-kirkire

Chi Huynh

Tafiya mabudin ilmi



Chi Huynh

Bayan da aka ci Saigon da yaki, a 1975, Sai Chi Huynh ya fara wasi-wasin barin mahaifarsa dake Kasar Vietnam don fara wata sabuwar rayuar a Birnin California. Bayan 'yan shekaru, sai ya kwashe yanasa-yanasa, ya bai wa gida baya. An kuma san wuya, wajen wannan tafiya zuwa Birnin California. Rashin dadin tafiyar ya fara ne tun lokacin da ya tako kafarsa cikin jirgin ruwa, don yin gudun hijira zuwa Kasar Thailand. A karshe dai isarsa zuwa bakin gabar tekun California, sai ya zama tamkar "budewar

sabuwar rayuwa” ga Huynh. Bayan wannan bakar wuyar da ya sha, tun daga ranar da ya sunkuya kan barin garinsu, tunaninsa, a kulum, shine ta yadda zai kawata duk wani abinda ya dafa.

Kirar abubuwan wuya, sana’ar da mahaifinsa ya kware a kai, tun a Kasar Vietnam, sai ta zama babbar sana’ar da zai cimma burinsa. Huynh ya sanya wa kamfanin yin kayayyakin wuyan nasa, sunan Galetea, ya kuma yi zamansa a Yankin Los Angeles.

Bayan kamar shekaru 25, sai wata guguwar ta kada, Huynh ya abka wa sana’ar kirkire-kirkire. Bayan kuma da ya fara shahara game da yin kayayyakin wuya na gargajiya, shagonsa ya yi suna, sa ya fara tunanin ‘Me zai faru, idan har na fara amfani mulmula dutsen wuya daga mirjani, don launinsu ya rika sheki?”, in ji shi.

Yin hakan, in ji shi, shi zai sa ya kara shahara game da kirkire-kirkirensa, ma suna Kindimirsi, wanda shine sunan dutsen wuyan gargajiyar da ake yi daga mirjani. Huynh ya dauki dogon lokacin kafin ya fara koda mirjanin, wajen yin Kindimirshin.

Sana’ar dutsen wuyan kindimirshi, ita ce ta fi kowace sana’ar yin dutsen wuya, tun farkon Karni na 20, lokacin ma da aka fara yin amfani da mirjani, a Kasar Japan.

Don ganin kuma ya bunkasa sana’ar, ta yi daidai da irin ta asalin wurin da ake yin ta, a 2005, sai Huynh, ya kafa wata masana’antar ta noman mirjani, a garinsu dake Vietnam, dake gabar ruwan kasarsu.

Sai ya fara amfani da katar dabbobin ruwa, wadanda ke da da’ira mai kyau, da kuma murjanai, masu launi dabam daban, irin su mai ruwan makuba da masu launuka iri-iri, ya bar su suka yi ta tsira, har tsawon shekara daya, kafin ya tabbatar da ya samu bayan irin abubuwan da yake bukata ya fara sheki. Wannan gonar ce ta bunkasa yawan dutsen wuyar da yake yi, daga bisani kuma kasuwar kayayyakinsa ta watsu, saboda kyawon yadda yake yin su.

Tarihin rayuwar Huynh ta kunshi abubuwa da dama. Tun daga matsayinsa na maraya, a lokacin yañin Vietnam, ya zuwa shaharar da ya yi ta yin dutsen wuya a American. Burinsa shine ya kawata abubuwa a duniya, kuma bai gaza ba, wajen ganin hakan ta tabbata. Har ila yau, tarihinsa ya nuna irin yadda zuciyar makerin na karau take. Maimakon ya rika yin irin wadanda aka saba da su, sai ya zabi yin abinda zai yi fice akai. Huynh ya yi imanin cewa, masu kirkire-kirkire ba su da kwanciyar hankali sai sun bullo da wani sabo. “Babu wanda zai yi tsammanin da gaske kake yi, sai ka nuna ko kai wanene. Wannan kuma shine bambancin dake tsakanin tunani mai kyau da abinda ya shahara, ko kuma tsakanin wanda aka saba da shi, da wanda ba a

taba gani ba.” Daga *Ben Casnocha*, *mawallafin* Littafin My Start-Up Life: What a (Very) Young CEO Learned on His Journey Through Silicon Valley.

Ba dole ba ne, ra’ayin da aka bayyana a wannan kasidar, ya zama daya da ra’ayi ko manufofin Gwamnatin Amirkha.

Wuraren Bayar Da Dama Yin Kirkire-kirkire A Duniya

Daga G. Pascal Zachary



Wani makirkirin sinadarin na ’ura ne, a Kamfanin Intel Corporation dake Santa Clara, ta Jihar California, daya daga cikin manyan masana ’antun dake Kwarin Sinadari na Silicon Valley.

*Kwarin Sinadari na Silicon Valley da kuma sauran wuraren dake bayar da damar yin kirkire-kirkire, suna tsira ne, bisa ga wani dalili kwakkwara, in ji wani dan jarida, G. Pascal Zachary, kuma mawallafi, ga shi malami, wanda ke yi wa mujallar **New York Times** ta Wall Street, rubuce-rubuce.*

Lokacin da wani hanshañin attajiri dake arewacin California ya fidda dolar Amirka, na gugar dola, har miliyan dubu, domin zuba jari, a “sana’ar da ake tsammani babu tabbas”, a 2009, sai Kwarin Sinadari na Silicon Valley ya bayyana wa duniya cewa, duk wanda ya kona rumbunsa, ya san inda toka take kudi.

Vinod Khosla, wanda ya fitar da wadsannan makudan kufade, wani shahararren mai zuba jari ne, wanda ya saba da shiga fagen duk wani mawuyacin halin kasuwanci.

Shekaru 30 ke nan da suka wuce, da Khosla ya baro garinsu dake Kasar India, don yi karatu a Jami’ar Stanford University dake California, inda ya karanta darasin harkokin kasuwanci. Lokacin kuma da ya sauve karatunsa, a 1981, ya taimaka, wajen kafa wata babbar masana’antar harhada na’ura mai kwakwalwa, mai suna Sun Microsystems. Kwanan nan kuma, Khosla ya tsunduma ga harkar samar da makamashi, inda basira da hulsa da kasar da yake zaune, ta samo matsalar makamashi. Hakika, sauran sassan duniya sun dukufa akan neman irin abinda zai maye gurbin irin makamashin da ake amfani da shi a yanzu, don tabbatar da ganin cewa babu wanda zai yi kakagida game da irin yadda harkokin fasaha ke bunkasa a duniya. Duk da haka, irin kókarin da Kwarin Sinadari na Silicon Valley ke yi, na fasada ci gabon duk wata basira game da fasahar makamashi, wani tuni ne ga irin yanayin da ya bayar da damar yin haka. Ba haka, kawai, kirkire-kirkire ke tabbata ba, sai idan an sami yanayin da zai dauki dawainiyar masu zuba jari da jami’o’in nazari, da kamfanonin harkokin fasaha da kuma injiniyoyi da masana kimiyyar dake da hasashen kirkiro wani sababbin abubuwa.

“Duk al’amarin kasada ce da ba wanda ke son ya dauka,” in ji Khosla game da sabon jarin na sa.

Kuru da sake kirkiro wani abu, shine babbani aikin Kwarin Sinadari Silicon Valley. Yau kuma, kusa shekaru 100 ke nan, da wannan yankin yake kan gaba, wajen kirkire-kirkire, wanda daya daga cikinsu ita ce na’ura mai kwakwalwa ta farko, daga bisani kuma sai linzamin sarrafa ta, da yanar-gizo da nuna hotuna da kade-kade da kuma harkokin sadarwa. Kowane lokaci Kwarin Sinadarin Silicon Valley a shirye yake, ya shafe wata kirkirar da aka yi, ko ya dakushe zamaninta, a wata cibiyar dake duniya, don ganin an bullo da wadsansu sababbin abubuwan da za su taimaki kwarin, wajen rikon jagamar shahara, a duniya.

A tsakanin shekarun 1990, fasahar binciken halittu ta shahara, a arewacin California, ba don komai ba, sai don irin rawar da na’ura mai kwakwalwa ke

takawa, wajen binciken gudanar da aikin injiniyoyi da harhada magunguna da kananan halittu.

A farkon wannan karnin ma, fitowar Shafin yanar-gizo na Google ya sa yankin na duniya kan gaba, wajen shafukan sululun yanar-gizo. Kwanan ma, Kwarin Sinadarin na Silicon Valley ya malalo kamfanonin hotuna da kade-kade, irin su Twitter da Facebook, don zama wata kafa bude shafukan karatu irin su Wikipedia. Kuma na'urar kida ta iPod da wayar tafi-da-gidanka ta iPhone, da Kamfanin Apple ya zana ya kuma kera, a dakin bincikenta dake Kwarin Sinadarin na Silicon Valley sun kawo wani kyakkyawan juyi ga kayayyakin dake amfani da wutar lantarki, a duniya.

Wannan hubbasar da masu kirkire-kirkire suka yi a arewacin na yankin California, ta bayyana dalilin da ya sa yankin yake da rike da akalla kashi 40 daga cikin 100, na jarurukan da ake saka wa, bisa ga kasada, a dukan fadin Amirkia. Wannan ya hada da yankunan Los Angeles da San Diego areas, yayinda yankin na California ke da kusan rabin dukan jarin da ake saka wa, a cikin ‘yan shekarun nan. Samun wadannan kufaden ne, ke kara yankin irin karfin arzikin da yake da shi, domin kudi ba karamin jan hankalin masu basira suke yi ba, a ko’ina cikin duniya.

Hada gungun masu basira da kere-kere

Koda wani mai basira ya dawo gida, wurin dake ba shi damar nuna basirar ta sa kan ci gaba da janyo hankalinsa matuka. Anna Lee Saxenian, wata kwararriya game da yankunan kirkire-kirkire, dake Jami’ar California, dake Birnin Barkeley, ta nuna cewa masu kirkire-kirkire na iya kaiwa da komowa, a tsakanin California da sauran gungun takwarorin aikinsu, dake wurare, masu nisa, irin su kasashen India da Taiwan. Wannan shi ne abinda Saxenian ke kira “sabuwar dabbar ruwan nan dake cikin koko”, musamman don samun damar inda za su baje kolin bajintanrsu, ba tare da sun kashe dimbin kufade ba, irin yankin Asia, inda suke da daraja, fiye da Amirkia da kasashen Turai.

Kowane gungun masu kirkire-kirkire yana da wata irin baiwa, ta samun galaba. Lokacin da yake tsara tarihin bunkasar manyan birane da abubuwan da suka sa suke nacewa ga zama kan gaba, wajen mamaye duk wata bakuwar basira, in ji wani masanin harkokin Tarihi na Kasar Ingila, Peter Hall, shine duk yadda aka yi, abin mamaki, ba su rabuwa da wadannan wuraren. Kamar dai yadda fungiyoyin kwallon kafa na Manchester United da Real Madrid ke ta jera gungun shahararrun ‘yan wasa, a kowace shekara, haka wadannan biranen da yankuna ke tabbatar da ganin sun rike duk wani abin kwarai da suka dafa. Su ma kansu, shahararrun masu basirar, sun fi so a ce suna tare manyan kamfanoni, balantana ma yin hakan ke sa manyan birane da fungiyoyi ke ta kara karfi.

Al'amarin ba boyayye ba ne. Dukan wanda ke zuba jari ya kan dubi in mai kirkire-kirkire yake zaune, kazalika da irin shaharar da ya yi. Idan har mutumin Kasar Brazil na da kwakkwatarar basirar yin baturorin mota, to, idan har yana da wayo, ya nemi kasuwa a kasashen Japan da Germany, wajen tarin yadda zai sayar da kayayyakinsa. Shi kuma Ba'ndiyen dake zana yadda ake kera jirgin kasa, dole ya kebe wadansu kudi, na musamman, don zirga-zirgar zuwa kasashen Turai. Shi kuma mai zana yadda ake kera linzamin na'ura mai kwakwalwa, amma ya nace da ya zauna a Kasar Rasha, to, babu shakka, zai fi samun wadanda za su zuba jari ga irin basirar da Allah ya ba shi, idan ya koma Kwarin Sinadari na Silicon Valley, don nan ne kakarsa za ta yanke saka.

Wata sa'ar da aka ci kuma, ita ce, dukan mutanen da masu kirkire-kirkiren, an rarraba su, a ko'ina, cikin duniya. Kasar Faransa na da gungun masana harkokin zirga-zirgar jiragen sama, da jiragen kasa da magunguna da kuma makamashin kare-dangi. Ita kuma Kasar Germany, ta jima, kusan shekaru 100, tana jagorancin kirar motoci. Yankin Bangalore kuma dake Kasar India, wata daba ce ta masu kera linzamin na'ura mai kwakwalwa. Yayinda Kasar Korea ke kan gaba, wajen kera kayayyakin lantarki, tun daga wayar tafi-da-gidanka, har ya zuwa injin wankin tufafin dake sanin irin nauyin kayan da aka labta masa, da kuma yawan ruwan da zai yi amfani da shi. Injiniyoyin Kasar Brazil kuma sun shahara ga na'urorin jiragene sama, Kasar Isra'il kuma bar ta da daura wa na'urar kayayyain tsaron da wani ba zai ga irin abinda ka ajiye a cikin na'urarka ba.

Idan ka bi tarihi, za ka lura da irin abinda ya sa kowane yanki ya shahara a kan abinda yake yi. Kusan shekaru 20 ke nan, bayan da Tarayyar Soviet ta wargaje, aka kuma kawo karshen Zaman Dar-dar, Kasar Russia ta kasance a kan gaba, wajan kaddamar da fasahar zirga-zirga zuwa sararin samaniya, da habaka masana'antun zuwa yawon shakatawa a sararin samaniyar. Hatta Cibiyar Nazarin Sararin Samaniya ta Kasar Amirka (NASA), wani lokacin, ta kan yi amfani ne da kumbon Kasar Rasha, don ya kai Amirkawa, zuwa sararin na samaniya. Bugu da kari, gwamnati na taka gagarumar rawa wajen killace irin wannan gungun na masu kirkire-kirkire. Gwamnatin Kasar Faransa ta zuba gagarum jari ga samar da fasahar makamashin kare-dangi da kuma horar da masana fannin, ta hanyar yanke shawarwarin dake magance duk wani hadari, da kawar da wasi-wasi daga zukatan masu kirkire-kirkire, don inganta shiga gasa da kasashen duniya. Kasar Amirka kuma na kashe makudan kusade, wajen kera kayayyakin lantarki na zamani, mafi yawa wadanda suka shafi harkokin soja, da kara kaimin kirkire-kirkire, ta wannan bangaren ne ma, Kamfanin Intel, ya zama bai da na biyu, a tsakanin masu kera kayayyakin injin na'ura mai kwakwalwa. Kuma manufotin gwamnati

na nuna kauna ga kayayyakin da ake yi, a cikin gida, da bayar da damar gudanar da kirkire-kirkire a masana'antu, a Kasar India da kuma wadanda suka shafi zirga-zirgar jiragen sama, a Kasar Brazil.



Shugaba Lee Myung-bak ne a Birnin Daejeon dake Kasar Korea ta Kudu, yana duba wata motar gwaji, dake amfani da wutar lantarki, a kan irin titin da za ta rika bi.

Komai Nisan Jifa...

Yayinda wuraren kirkire-kirkire ke da muhimmancin gaske ga masu kirkiren, haka ma bayar da damar yin kirkire-kirkire ba shi da wata tabbasta cewa ba za a samu rashin biyan bukata ba. "Wane abu ne ya sanya wani gari,

a wani lokacin, ya yi suna, aka wayi gari ana ta kirkire-kirkiren da har ya zama dandali? Wannan ita ce tambayar da wani masanin harkokin tarihi, Hall, ya yi, a wani littafinsa mai suna *Cities in Civilization*. “Me ya sa kuma sunan yakan dushe, a cikin ‘yan shekaru, atata, mafi yawa shekaru 10 zuwa 20, daga bisani ya zame tamkar ba a taba yin sa ba?”

A duk lokacin da wani gari, ko kuma wani yanki, ya dushe, a fannin harkokin fasaha, to, akwai wani takamammen dalilin da ya sa hakan. Dakushewar garin Detroit, a fannin kera motoci, ba zai rasa nasaba ba da irin yanda ake zartar da shawarwari game da harkokin kanikanci da tattalin arziki da kuma harkokin kasuwancin da suka cunkushe na shekarun bayar da har yanzu ba su da wani tasiri.

Da wuya kuma, a sake maido da irin wannan martabar, ba don komai ba, sai don ba-zatar barkowar sabon salon fitattun sababbin cibiyoyin fasaha, a doron duniya. Mai yiwuwa kuma irin abinda ya sa birnin Helsinki, na Kasar Finland ya yi suna ke nan, a cikin ‘yan shekarun nan, a matsayin cibiyar harkokin fasahar wayoyin tarhon tafi-da-gidanka. Irin yadda Kamfanin Nokia, shi daya tilo, ya samu nasara ne, ya daukaka Kasar Finland da arewacin Kasar Turai, kai wa ga zama jagoran kasashen duniya, a wannan fanni, musamman irin su garuruwan Stockholm da Copenhagen, wadamsa suka zama dabar kere-keren wayoyin tafi-da-gidanka. Misalin shekaru 10, da suka wuce, kusan kowane masanin harkokin kirkire-kirkiren dake duniya, yana da ofishi a wannan wurin, saboda kwarewar jama’ar yankin. Har ila yau, dandalin ya daukaka muhimman sababbin kamfanonin harkokin sadarwa irin su Skype.

Nasarar Kamfanin Nokia, wanda ya shahara, a wata ‘yar karamar kasa, ya kara wa wadansu kananan kasashe da dama zimma, ya kuma sa ba a kula garuruwan dake da hasashen kafa kamfanoni, kamar Nokia. Duk da haka, gwamnatoci sun samu matsala, wajen kafa irin wannan dandalin, tun daga tushe. Ba kuma kudade kadan ake kashewa ba, wajen yin gasa da wadansu yankunan, domin ana irin jami'o'in da za a bukata, ba karamin cin kudade za su yi ba, wajen habaka jari da kuma magance asarar jarurukan da, watakila ma, babu su.

A tsakanin 1970 ya zuwa 1980, dgaruruwan garuruwa, a fadin duniyar nan, sun yi kokarin yunkurin kafa kwarin sinadari, irin na Silicon Valleys. Mafi yawan kokarin da suka yin, bai wuce na farautar masana’antu ba, kadai, inda suke shafa wa kamfanonin fasaha, room a baka, na da su kafa masana’antu, ko kuma harkokin nazarin bincike, a wadansu wurare.



Wani mutum ne, a Birnin Nairobi, na Kasar Kenya, ke aikewa da kudi, ta na'urar nan ta M-PESA, dake cikin wayar tafi-da-gidanka.

A wani lokacin farautar masana'antun na iya haifar da wata basirar. Alal misali, a yau, Tsibirin Kasar Singapore, shine kan gaba, wajen kera rumbun kananan na'urori masu kwaƙwalwa, a duniya, bayan da ta hakure wa zaman kananan masana'antun wadansu na'urorin, a kasarta. Shi ma Tsibirin Kasar Ireland, ya janyo hankalin masana'antun yin kayayyakin lantarki da dama, ba don komai ba, sai don saboda irin dan albashin da jama'ar tsibirin ke samu, idan aka kwatanta shi da na kasashen Turai, wanda kuma ya kasa tabbatar da burin da suka da shi.

Sarin Daddawar Kauye

Wani matakintu ko fungiyoyin jama'a ke dfauka kuma, sune bajinta da kwarewa, wadanda, musamman, ake amfani da su, ga duk wata sabuwar damar da aka samu, wajen mayar da yanki ya sake shiga sahun masu sarrafa harkokin fasaha.

Alal misali, daya daga cikin irin zarrar da Kwarin Sinadari na Silicon Valley ya yi, ita ce ta gano hanyoyin da za a sake sarrafa tsofaffin karafan injuna, ko kuma sake kwaikwayon irin wanda ake da shi da. Yanzu akwai motocin dake amfani da wutar lantarki da wani launin kayayyakin makamashi, masu

dorewa, a Kwarin Sinadarin na Silicon Valley domin mutanen dake wurin, suna da kwarewa game da aikin kera baturori (saboda bukatar da ake da ita, wajen yin amfani da baturori a na'urori masu kwañwlwa) da na'urorin sarrafa turakun wutar lantarki.

Kamfanoni masu zaman kansu ne, ke da wuyar sha'ani, koda kuwa a wuraren da, da wuya, a kai ga cimma burin jagorancin kirkire-kirkire. Ka dubi Kasar Kenya, wadda ta shahara game da dabaran fasahar canjin kudaden duniya, da aka sani da suna M-PESA. Babban kamfanin wayar tarhon tafi-da-gidanka, na kasar, mai suna Safaricom ne, ya kirkiro fasahar ta M-PESA, wadda ta hada har da fasahar aikewa da wasiku, a makekiyar yanar-gizon kamfanin dake sayar da katin wayar dauki-wuce, ga dukan mai bukata.

Ta wannan fasahar ta M-PESA ce, jama'a ke aikewa da kudaden da wadanda aka aikewar za su karbi kudadsensu ga masu sayar da katin, su kuma su debe wa wanda ya aiko da kudin kati, daidai da yawan kudin da ya aike.

A sakamakon wannan nasarar da fasahar M-PESA ta samu, Birnin Nairobi yanzu ya zama gungun masana kirkire-kirkire, a fannin wayar tafi-da-gidanka.

Shafin yanar-gizon Google da kamfanonin Microsoft da kuma Nokia na daukar masana harkokin bincike aiki, a birnin, bayan sababbin kamfanoni dake tasowa a yankin wanda rubutun wasikun neman aikin wayar tarhon tafi-da-gidanka da sarrafa yanar-gizo, ya zama ruwan dare. Har yanzu kuma Birnin Nairobi bai kai matsayin manyan biranen duniya da suka ci gaba a duniya ba, irin su Bangalore ko Shanghai, wadanda suka zama dandalin masana dabaran kirkire-kirkire. Amma, a gaskiya, a ce irin wannan basirar ta bulla a Afrika, ba karamin tasiri ta yi ba, game da abinda wani kwararre a harkokin kasuwanci, Henry Chesbrough, ya kira "bajinta tsirara" ba. Yanzu ilmi na saurin yaduwa, fiye da da, kuma yankuna na Allan-bakun cimma junu, ko kuma tsallake su, ga shi kuma, wadanda suka shahara na ta kara bunkasa. Kodayake, har yanz samun wuri, na da muhimmancin gaske, amma, a zahirin gaskiya, ba kamar da ba.

A duba littafin Ashlee Vance, mai suna Not Just Semiconductors: Silicon Valley and the Culture of Innovation na watan Mayun 2008, da labarin mujallar eJournal USA mai lakabin Venture Capital Meets Hi-Tech, a D<http://www.america.gov/st/econ-english/2008/May/20080512164429jmnamdeirf0.4961206.html>

Ba dole ba ne, ra'ayin da aka bayyana a wannan kasidar, ya zama daya da ra'ayi ko manufofin Gwamnatin Amirkia.

Tarihin Kirkire-kirkire

Alicia Castillo Holley

Duk masanin harkokin kirkire-kirkiren dake da basira ta musamman na iya bayar da mamaki.



Alicia Castillo Holley

“**I**dan har za ka ranta cikin na kare, to, tafi kai kadai, idan kuma za ka da nisa, tafi da sauran jama'a," in ji wani Karin magana a Nahiyan Afrika. Idan akwai abu daya da mafi yawan masana harkokin kirkire-kirkire ke da shi, bai wuce hadin gwiwar da suke yi da juna ba, wajen ganin sun cimma burinsu.

Masu kirkire-kirkire kan nemi taimako, kowane iri ne. Ya-Allah na tausayawa ne, ko na kudi, ko kuma na kwararan shawarwari. A kodayaushe su kan nemi abokan hulda, da masu zuba jarurruka da iyayen gida, don tambaya akan matsaloli irin na: Wace ce hanya, mafi a'ala da za mu tabbatar da wannan al'amarin ya yi aiki? Ta yaya za mu sami kudin da za mu inganta wannan tunanin na mu? Ta yaya zan rika kula iyalina, ganin yadda wannan aikin nazarin, ko kuma kasuwancin ya shige mini gaba?

Sun kan nemi, irin matar nan, haifaffar Kasar Venezuelan, Alicia Castillo Holley. Kusan duk rayuwar Castillo Holley ta kare ne wajen hada gwiwar zuba jarurruka a kamfanoni tara, da bayar da shawarwari ta hanyar fasahar

watsa labarai, kazalika da kamfanonin samar da makamashin da ba ya gurbata yanayi, a yankin Kasashen Latin Amirka. A matsayinta na kwararra, ta kan bayar da gudunmawar irin kusaden da ake kashewa, wajen kafa kamfanoni da kuma neman abokan hulda.

Daya daga cikin kamfanonin farko, watau Directory Systems, ya roki Castillo Holley, game da dukan shawarwari na basira da suka shafi fannin kirkire-kirkire. Kamfanin na Directory Systems yana kunnen-doki ne da kamfanonin da suka gagara wajen sayar da kayayyakin injinun hakar ma'adinai da kayayyaki ga kamfanonin dake bukatar irin wadannan kayayyakin. Shahara a kan bin diddiñin irin kusade da duniyoyin da kamfanin yake da su, ya sa ya riña yin kunnen-doki, da masana'antun yin kayayyakin hakar ma'adinan.

Harkar kirkire-kirkire na bukatar kyakkyawan tsarin aiwatar da shi, yadda ya kamata. Kamfanin Directory Systems ya yi hayar Castillo Holley da ta shimpida masa, dabarun tafiyar da aiki, da hayar lauyoyi daga Kasar Chile, don fasada ayyukansa a yankin Kasashen Latin Amirka, ya kuma gina wata masana'antar zamani ta yin irin kayayyakin da suka dace. Ta yi dukan abinda kamfanin ke bukata, wanda a karshe wani katafare Kamfanin Harhada Magunguna na Amirka, ya sayi Kamfanin na Directory Systems.

“Na kiyasta wannan aikin da na yi wa Kamfanin Directory Systems, ya rage masa yin aikin shekaru biyu zuwa hudu, kuma zai samu rrar kusan dolar Amirka dubu 500”, in ji Castillo Holley. Castillo Holley ta samu wannan nasarar ce, saboda ta yaba wa hazikancin wadanda suka kafa kamfanin. Suna nuna kauna ga harkokin masana'antun hakar ma'adinai da bayar da jerin-gwanon bayanai. Ta kuma nuna kauna da sha'awar yadda suka sauñaka tafiyar da harkokin masana'antar, kazalika da tabbatar da irin bukatar, wadanda suka kafa kamfanin, ta musamman, game da kwarewar jama'ar yankin Latin Amirka, wadda ba su da ita.

Idan har ana bukatar wani abinda aka kirkiro ya yi tasiri, to wani lokacin sai an dauko mutane daga waje, wadanda ke da kwarewa da sha'awar da za su yi daidai da irin na ka. Castillo Holley ta ce, lokacin da take aikin kirkire-kirkire, da farko ta kan yi kokarin tantance irin abinda suke bukata. Ta na kuma taimaka wa masu kirkire-kirkire da su mayar da hankali a kan wadannan abubuwan da ake bukata, sa'an nan gayyato mutanen da za su taimaka wa junna.

Ben Casnocha, author of shine mawallafin littafin nan mai su na My Start-Up Life: What a (Very) Young CEO Learned on His Journey Through Silicon Valley

Ba dole ba ne, ra'ayin da aka bayyana a wannan kasidar, ya zama daya da ra'ayi ko manufofin Gwamnatin Amirka.

Sirri Hudu Na kirkire-kirkire

Daga Alex Soojung-Kim Pang



Masaniyar Harkoin Kimiyya Stacey Reed ce, ke yi wa Kafanin Petro Algae na Florida aiki, kamfanin dake amfani da fasahar tatso mai daga gamsakuka.

Masana harkokin kimiyya da kasuwanci, yanzu sun fi amfana da juna, ta hanyoyin bai wa juna hadin kai, wajen kirkire-kirkire. Alex Soojung-Kim Pang, shine darektan harkokin bincike na Cibiyar Nazarin Harkokin Rayuwa, Nan Gana, kuma jami'in harkokin koyarwa, a Sashen Harkokin Kasuwanci na Jami'ar Oxford, kazakila kwakkarwan masanin dake koyer da darussan tarihi da fasfalar kimiyya da fasaha, a Jami'ar Stanford.

A tattalin arzikin wannan duniyar da muke ciki, inda kirkire-kirkire da zabagen ilmi suka yi kamari, ba abin mamaki ba ne, cewa duk tsawon tarihin nan, babu wata alaka tsakanin kimiyya da fasaha da kuma kasuwanci. Da a ce an taba ce wa makerin azurfa dake tsohuwar Kasar China, ko matukin jirgin saman dake zirga-zirgar harkokin kasuwanci, a shekarun da ake fatauci, ko kuma mai tsima barasa, a Karni na 18, a Philadelphia cewa, harkokin kimiyya za su raya harkokin kasuwanci, da sai ya yi ma ka kallon mahaukaci. Ko a yau ma, ba karamar wahala ba ce, a bayar da wata hujjar cewa, akwai dangantaka tsakanin kimiyya da kasuwanci, inda har za a bayar da misalan yadda ake zayyana manufarin kimiyya da harkokin masana'antu, su yi aiki tare, don amfanar juna.

Abubuwan dake kara bayar da wahalar su biyu ne. Na farko dai shine, duka kimiyya da kasuwanci, ba su da tabbas, don haka duk abinda ya shafi dayansu, ya shafe su duka, ganin irin yadda tsananta yin nazari da bunkasa dakunan nazarin dake kara inganta ci gaban masana'antu, ke saurin kashe kasuwa.

Na biyun kuma shine, yanzu kimiyya da basira, ba su da wani tasiri, kamar sauran al'amuran tattalin arziki. Da wuya a shawo kan yadda suke gudana da kuma baba-keren da suke yi, Asali ma, ba za a iya tantance duk wata dangantakar dake tsakanin kimiyya da masana'antu ba, yayinda wahalar fo'karin tantance amfanin da tattalin arziki ke yi daga kimiyya, ya fi duk yanda ake zato.

Duk da yake akwai masana, harkokin kimiyya, masu dimbin yawa, dake kirkiro abubuwan da ake amfana game da harkokin kasuwanci, irin su madubin duba-rudun Galileo da kwan lantarki na Benjamin Franklin, gudunmawar da harkokin kimiyya suka bayar ga harkokin kasuwanci, ba wani abin a-zo-a-gani ba ne, sai lokacin da aka fara kakkafa masana'antun lantarki da magunguna, a Karni na 19. Wadannan lokuttan ne, kadai, da masana harkokin kimiyya, tare da taimakon kayayyakin aiki, da kuma hasashensu, za a ce sun taimaka, fiye da leburorin dake dakake, a wurin aiki. Ya zuwa karshen karnin kuwa, kamfanoni kadan, irin su DuPont da AEG da General Electric, kadai, suka tabuka, wajen gudanar da harkokin nazari da inganta dakunan binciken da za su taimaka wa ingancin abubuwan da ake yi, su kuma share wa harkar shirin ci gaban harkokin fasaha irin matsalolin da suke fuskanta.



Ma'aikatan Kamfanin Kera Motoci na Tesla ne, suke hada wata mota mai yin amfani da wutar lantarkin, a Kwarin Sinadarin Silicon Valley, wurin da ya shahara ga kera batiri.

Tun lokacin da aka gano kwayar maganin nan, mai magance illar kananan kwayoyin cuta, watau penicillin da na'urar magana da matukan jirgin sama, idan sun tashi, da jirgin yañi da bom din kare-dangi, lokacin Yakin Duniyar na Biyu ne, aka tabbatar da cewa kimiyya na da tasirin da za a yi amfani da ita, wajen nuna isa. Bayan yakin kuma, mafiya yawan manyan kamfanoni, sun kakkafa Dakunan Bincike, wadansunsu ma, irin su Dakin Bincike na Bell, sun dauki dubban ma'aikata, aiki.

Amma duk da wannan lokacin, da kamfanoni suka durmuya ga harkokin bincike, ba kasafai ake hañkance muhimmancin yadda kimiyya ke taimakawa ba. Dakunan binciken na bukatar cin gashin kan da za su gudanar da bincike, yadda ya kamata, amma da wuya sukan aiwatar da abubuwan da suka gano. A wadansu mashahuran al'amurran ma, kamfanoni ke biyan kudin gudanar da wani babban bincike, amma duk da haka, dakin binciken Palo Alto (PARC) na Kamfanin Xerox ne, farkon yadda aka firkiro kera

na'ura mai kwakwalwa, wanda daga bisani kamfanin na Xerox bai ma san yadda zai yi, da dama, daga cikin manyan masana harkokin bincike-binciken dakin binciken na (PARC) ba, wanda daga bayo wadansunsu suka koma Kamfanin na'ura mai kwakwalwa na Apple Computer da bangarenta na ayykan Macintosh, (Don cin gajiyar wannan al'amarin, sai Kamfanin Xerox ya dukufa ga yin na'urar dab'i, a lokaci daya da dakin binciken na PARC, ya kuma samu duban miliyoyin dolar Amirka daga wannan fasahar.

Hakika, na'ura mai kwakwalwa ta taimaka, wajen bude fagen harkokin kirkire-kirkiren kimiyya da kasuwanci. A sakamakon kuma, yanar-gizo da sauran na'urorin da ba su da tsada da sauran linzaman na'urorin da kuma sinadarin, mai arhar da ake amfani da shi, don yin linzaman na'urori, a dakinan bincike, kazalika da sauran kayayyakin harkokin fasaha, na'ura mai kwakwalwa ta karyar da kasuwar manyan na'urorin harkokin fasaha, masu tsada, ta kuma tilasta wa kananan kamfanoni da su rage yawan kudin da suke kashewa, wajen harkokin bincike, sa'an nan ta sanya harkokin kimiyya suka zama wadansu kafofin tarwatsa harkokin kasuwancin dabarun kamfanoni ko kuma manufofin gwamnati. Alal misali, dakinan bincike irin su PARC, sun bayar da shawarar cewa, kamfanoni za su fi sakewa idan suka tallafa wa kananan ayyuka, maimakon bayan da kudin gudanar da binciken da zai fi amfanar abokan takararsu. Duk kuma abinda ya amfani kamfani, to ya amfani kasar da yake. Kasar China ba ta kashe kufade masu yawa akan bincike da inganta kayayyaki, kamar Amirka, amma manyan kamfanonin Amirka ba su iya kafa dakinan bincike, da sauri, a Kasar China. Don haka, yanzu mun shiga wani sabon karnin da kimiyya ta fi kirkire-kirkire muhimmanci, fiye da kowane lokaci, amma ba ta tabbas din za a amfana da ita.

A lokacin da kirkire-kirkire ke da mutunci, kamfanoni da kasashe sun sha wuya fiye da yadda suka taimaka da cin gajiyar harkokin kimiyya. Wannan ya nuna ke nan, manufofin harkokin kimiyya ba su da tabbas? Hakika ba haka ba ne, domin yankuna da kasashen da suka ci gaba, sun nakalci sirri da dama.

Abubuwan Da Aka Saba Da Su

Babban sirri na farko shine babu wata alama, mafi sau&kin da za a hakikance wata dangantaka, tsakanin kimiyya da harkokin kasuwanci. Maganar cewa wai, bincike-binciken tsagwaron kimiyya ne ya jagoranci haifar da kimiyyar yau da kullum, wanda ta haifar da sababbin harkokin fasaha da kasuwnci, ba gaskiya ba ne. Fasahar dakinan bincike, ta yau a kullum, da ake amfani da su, a dakinan kwananmu, ba aikin injuna ba ne, dan adam ne sila. Tana bukatar wadanda za su fassara ta, da dillancinta, wajen taimaka wa masu inganta ta, da kamfanoni da za su gano inda za a sayar da sababbin

manufofi. Wani lokacin tana bukatar masu zuba jari da 'yan kasuwar da za su kafa fungiyoyin da za su agaza, wajen rage yawan kudafen da ake kashewa, ga gudanar da bincike da inganta yin kayayyaki.

Bugu da kari, fasahar na bukatar kamfanoni da zu yi kayayyakin, da rarraba su da kuma sayar da sababbin kayayyakin. Kasashe da dama na zuba jari, a jami'o'i da kananan bincike-bincike, da nufin samun riba. Asali ma, masu tsara manufofi kan yi tunanin ganin sun kakkafa kayayyakin kyautata jin dadin rayuwa da al'adu.



Shugaban Kasar Brazil, Luiz Inacio Lula ne, a wata masana'anta dake Petrobras, a Birnin Rio de Janeiro, rike da wani samfurin man gelon da aka samu daga itatuwa, daya daga cikin kayayyakin na kimiyya da kasuwanci.

Tsayayyar harkar kirkire-kirkire ba ta taimaka wa kirkiro wani abu, sai dai ta haifar da shi. Wannan kuma shine sirri na biyu wanda ke nuna cewa, a duk lokacin da ilmin kimiyya ya fara zagayawa, to harkokin kasuwancin kimiyya kan samu gindin zama, a fannin a al'adun jama'a da basirarsu. Yankunan dake da wayo ba su fo'karin kirkiro manyan cibiyoyin amfani da dan karamin al'amari, don gina babba, ko wani makamashi na dabani, ko kuma dunkulalliyar fasahar na'ura, ba don komai ba, sai don irin wannan kasuwancin, na iya lashe masu jari, amma fungiyoyin bincike dake kusa da

mashahuran masana kimiyya, na iya janyewa, a duk lokacin da suka samu wanda ya yi ma su tayin da suke bukata. Maimakon a dumfari wata holokuwar isa, nace wa manufotin da aka sani, sun fi kai wa ga biyan bukata, maimakon rungumar harkokin binciken ‘yan dagaji, da ba su da tsada.

Alal misali, yanzu Kasar Denmark ta shiga sahun manyan cibiyoyin da suka nace wa na’ura mai kwal’walwa. Me ya kawo wannan nacewar, wadda ke nazarin yadda ake kyautata amfanin na’urori, a harkokinmu na yau da kullum, irin su harkokin wutar lantarki da linzaman na’urori da nazarin hankalin dan adam da nazarin tsara wuraren gudanar da ayyuka? Wannan wani fanni ne dake bukatar surfin ilmin yadda jama’a ke amfani da fasahar zamani, kuma wani masanin harkokin kimiyya a Kasar Denmark, ya gano cewa, irin wannan ilmi a tsakanin fitattun masana harkokin tsare-tsaren dake kasar.

Haka kuma Kwarin Sinadari na Silicon Valley, na sake rikidewar zama wata cibiyar samar da wani irin makamashi na daban, ta hanyar bin tafarkin da ya saba bi, wajen kera baturori. Al’amarin ba haka aka so ba, amma masaniyar da ake bukata wajen kera na’urar tafi-da-gidanka, kan rubanya lokacin da za a d’auka, wajen kera mota mai amfani da wutar lantarki a Kamfanin Kera Motoci na Tesla. Ga masana manufofi, wannan ya nuna ke nan, dole a kururuta masana’antun dake amfani da basirar dake hannunsu. Ba ma kawai don sanya sababbin kamfanoni su yi fice da dadewa ba, amma har sai don amfana da masana’antun da ake da su.

Wuce-sanin Dakin Bincike

Sirri na uku shine cewa, shi kansa aiwatar da duk wani binciken kimiyyar kansa wata hazaka ce. Harkokin kimiyya da kasuwanci na da bambancin gaske, musamman dabarunsu da kuma luggogin yadda ake tafiyar da su. Muddin kuma ana bukatar cimma nasarar tafiyar da su, a lokaci guda, to, kowannensu zai bukaci cin gashin kansa. Idan har masanin harkokin kimiyya zai iya harhada bincikensa wuri guda, to, da wuya, farat daya, ya san yadda zai iya sayar da su. Wani abu kuma shine, dukan irin shekaru wata basira za ta yi, tana warware wadsansu matsaloli, dole ta bambanta da irin basirar da ake bukata domin kafa irin kamfanin da zai sayar da ita.

Sau da yawa kuma, mukan manta da cewa, akwai wadsansu bincike-binciken da ba su haifar da wadsansu kayayyaki, kai tsaye. Alal misali, idan masana harkokin bincikar yadda za a samar da makamashin da ba ya gurbata yanayi, suka gano wata sabuwar haryar zayyana bututun bayar da wutar lantarki, ko suka gano suka binciko wata gagarumar hanyar samar da wutar lantarki daga karfin maganadisu, ba za su yi watani tasiri, a duniya ba, sai idan an gano yadda abubuwan jin dadin rayuwar da muke da su, za su yi amfani da

wadannan bincike-binciken, da rashin illar yin amfani da su, da kuma ko za su lashe kufade masu yawa wajen aiwatarwa, da kuma yadda za a janyo raayin jama'a, game da cewar wadannan bincike-binciken sun fi na da, saukin sarrafawa. Su kansu wadannan ayyukan, wata basira ce mai zaman kanta dake bukatar masana harkokin danganta yiwar aikin harkokin kimiyya da kasuwanci, da gano yadda za a sayar da su, da kuma yadda za a sarrafa bincike-binciken don haifar da wata na'urar fasahar yau da kullum.

Sirri na hudu shine, irin ci gabon da ake samu, na dangantakar dake tsakanin harkokin kimiyya da kasuwanci. Kafin 'yan shekarun nan, kimiyya ta yi matukar tasiri, ga harkokin masana'antu da inganta yin kayayyaki, amma an samu karanci, a fannin yawan jama'ar da za su gudanar da al'amarin. Don haka, yanzu, sun karkata, matuka, ga haifar da wadansu sababbin na'urori, irin su kayayyakin na'urar bincikar lafiyar kwa'kwalwar dan adam, musamman a dkunan bincikar lafiyar kwa'kwalwar bil-adama, wadda ke bayyana wa masana harkokin lafiya irin yadda kwa'kwalwa ke aiki da irin abinda ke samunta, idan ta hadu da wani abu, ko kuma tsananin tunani.

Akwai kuma wata masaniyar, mai dimbin yawa, da ake samu daga shafukan yanar-gizo, irin su Amazon.com, wadanda ke bai wa masana harkokin kimiyya damar hakikance irin samfurin da jama'a ke so da kuma yawaita yin amfani.

Ita kanta Kasuwar Wall Street ta dandana tururuwar likitocin kiwon lafiyar bil-adama da masana tsabagen lissafin da ake amfani da shi, ga kintata harkokin kimiyyar yadda ake rage yawan asara. Kuma irin yadda aka inganta kayayyakin lura da yanayi, da yadda ake tsara kashe kufade, irin dukiyar da za a kashe, ko samo daga wani shiri, ya sa taimaka wa kamfanoni, matuka, yadda rashin gurbacewar yanayi, ke shafar yadda suke gudanar da ayyukansu.

A karshe dai, kamfanoni kafan ne, ke tallafa wa harkokin kirke-kirke. Kusan za a ce, an fi mayar da hankali ga samar da gidin zaman wata fungiyar da za ta sa masana cudanya da juna, wajen kara dankon zumuncin dake tsakanin dadaddun abokan hulda da masu saurin kawo sakamako.

Abotar Dan Biri Da Sanda

Irin kalubalen dake tare da kamfanoni da kasashe, ita ce, ta yadda za su zuba jarurruka ga harkokin kasuwancin dake maye gurbin harkokin kimiyya da na al'ada, wajen danganta harkokin kimiyyar da na kasuwanci, yayinda sukan bar kowannensu ya ci karensa, ba babbaka, ya kuma yi amfani da duk wani sabon binciken kimiyyar da ya kunno kai, wanda zai taimaka wa halayyar

dan-adam ganin dorewar muhimmancin manufofi da dabaru da kuma bunkasar sababbin hanyoyin gudanar da harkokin kasuwanci.

Dangantakar dake tsakanin harkokin kimiyya da na kasuwanci, ba kanwar lasa ba ce. A yau ma kam, sai a ce al'amarin sai kara cakudewa yake yi, wanda a karshe, ya amfane mu, idan mun san yadda sIRRIN al'amarin yake.

Ba dole ba ne, ra'ayin da aka bayyana a wannan kasidar, ya zama daya da ra'ayi ko manufofin Gwamnatin Amirk'a.

Tarihin Kirkire-kirkire **Daga Rael Lissoos**

Masanin Kirkire-kirkire shine wanda ke iya hada abubuwa uku, wuri guda, don haifar da wata sabuwar na'ura.



Rael Lissoos

Wani lokacin kirkire-kirkire kan barko daga harkokin fasaha, masu yawa, da ake da su. Idan kuma suka hadu, za su iya haifar da sababbin na'urorin da tsadarsu ta kan fi kudin da aka kashe, a kowane bangare. Rael

Lissoos ya shahara a yankinsa na Kudancin Afrika, wajen yin la'akari da wannan. Ya kera wata na'urar harkokin sadarwa da ba ta da tsada, inda ya hada wadansu kirkire-kirkire uku, wuri guda, don kirkiro magudanar sadarwar wayar tarho ta Wi-Fi da linzaminta dake iya hada layuyyuka da dama (don kara dogon zangon wani layin), da wayar tarhon Wi-Fi (wayar dake iya kai sako idan an hada ta da magudanar sadarwar Wi-Fi).

Lissoos ne ya kirkiro samfurin linzamin na wayar tarhon Wi-Fi, wadda ake kira "Tarhon Karkara" (Village Telco), a yankunan karkarar dake gonakin Yankin Orange, dake Kudancin Afrika. Da farko sai da ya tabbatar da ganin cewa, na'urar ta magudanar Wi-Fi ta yi aiki, yayinda take bayar da damar shiga shafukan yanar-gizo, yadda ya kamata.

Daga bisani ya miña na'urar ta wayar tarhon Wi-Fi ga kauyawan. Wayar, wadda aka yi wa lakani da **Ta-da**, yanzu ita kauyawan ke amfani da ita, wajen kira da amsa wayoyin tarho.

Amma Lissoos don kasuwanci ya kera wannan na'urar, ba don kawai jin dadin jama'a ba. Yanzu kamfaninsa, **Dabba**, ya hade wayoyin tarhon kauyawan da duk wani babban layin tarhon dake kasar.

Sai kuma ya kawo katin wayar tafi-da-gidanka, ya sayar wa jama'ar na karkara. Tunda yake duk wani kirán da za a yi, zai faro ne daga magudanar wayar Wi-Fi, to, kudin da za a biya, ba su kai na sauran wayoyin tarho ba. Lissoos ya karyar da farashin katin wayar tarho, inda yake sayar da wayoyi masu arha ga kauyawan, don buga wayoyin tarho, a ko'ina cikin kasar.

Lokacin da wata Kungiyar Injiniyoyi ta Berlin ta karrama shi, Lissoos ya ce, "abinda muke yi shine, ko dai mu sa kamfanonin su rage farashinsu, ko kuma mu ci gaba da taimaka wa jama'a da dama, yin amfani da wayar tarhon Kamfanin Dabba. "Ta ko'ina ka duba, jama'a ne za su amfana."

Don kuma ganin ya fadada ayyukansa, Kamfanin na Dabba ya hada gwiwa da Kamfanin Wayar Tarho na Cisco, dake Kwarin Sinadari na Silicon Valley, don taimakawa, wajen fito da sababbin hanyoyin sadarwa, a sassa dabam daban dake Kasar Afrika ta Kudu, kazalika da harkokin bayar da horon yadda za a daidaita su, su yi aiki.

Kamar yadda kowane sabokirkire-kirkiren ke katsalandan ga harkokin kasuwanci, a wannan karon ma, kasuwar wayoyin tarhon Kasar Afrika ta Kudu, musamman ta bangaren Kamfanin Dabba ya sanya masu lura da yadda ake gudanar da harkokin wayar tarhon tafi-da-gidanka na kasar, sun kara zuba ido. Amma dunkulallun fasahohin dake rage farashin kayayyaki, na iya dakushe abokan hamayya, ko da kuwa abokan hamayyar nan, masu lura da yadda ake gudanar da harkoki ne, na gwamnati. Mafarkin Rael Lissoos, na bullo da sababbin kirkire-kirkire, ya zama gaskiya a Kasar

Afrika ta Kudu, inda ya yi amfani da tsaffin hanyoyi. Ba kuma shi kadai ba ne.

A gaskiya ma, wani kwararren mai bayar da shawarwari, Frans Johansson, ya wallafa wani littafi game da dabaru, mai suna “Magani” (*The Medici Effect*). Johansson ya rubuta cewa, a duk “Lokacin da ka tsoma kafarka a sarkakkiyar fannoni da ayyuka da kuma al’adu, to, za ka iya dunkule dukan tasirin da suke da shi, wuri guda, don zama wata gagarumar sabuwar haiba.”

Ben Casnocha, shine mawallafin Littafin My Start-Up Life: What a (Very) Young CEO Learned on His Journey Through Silicon Valley.

Ba dole ba ne, ra’ayin da aka bayyana a wannan kasidar, ya zama daya da ra’ayi ko manufotin Gwamnatin Amirkia.

Hadin Kan Gwamnati Da Kamfanoni Masu Zaman Kansu
Taka Rawar Gwamnati A Kananan
Harkokin Kasuwanci

Daga Charles W. Wessner



Shirin Bayar Tallafin Bincike ne, na SBIR, ya taimaka wa wani karamin kamfani a California, kera wannan fasahar ta injin “gani-har-hanji”, watau X-ray, da ya daukar hoton jirgin ruwa mai nutso, ta kowane bangare.

Darektan Harkokin Fasaha, Kirkire-kirkire da Kasuwanci, na Hukumar Jami'an Kasa, wadda ta hada da fungiyoyin masana harkokin kimiyyar dake bai wa Gwamnatin Tarayya shawara. Charles W. Wassner ya bayyana cewa: "Hadin kan gwamnati da kamfanoni masu zaman kansu, na taimaka wa kananan harkokin kasuwanci kai kayayyakinsu, zuwa kasuwa."

Gwamnatoci a duniya, na mayar da hankali ga tsara manufofi, na musamman, da bayar da makudan kufade ga gasar samar da ilmi da gogayya da kawo ci gaba. A wannan fannin, samun nasara ya danganta ne ga raya jarurukan kasa, matuka, a fannin binciken kayayyakin dake gogayya da juna, a kasuwanni.

Mafi yawa manufofin kasa, sun fi mayar da hankali ne ga bin hanyoyin da aka saba, wajen gabatar da binciken kirkire-kirkiren dake cin kufade masu yawa, wadanda, a karshe, haifar da ci gaba da inganta harkokin kasuwancin sababbin kayayyaki, a kasuwanni.

Duk da haka, harkokin aiwatar da kirkire-kirkire na duniya, sai kara karuwa suke yi, inda nasarorin harkokin fasahar da aka samu, kan zarce, ko daidaita harkokin binciken na farko.

Jarin farko, shine babban jigon taimaka wa dangantakar dake tsakanin jami'o'i da kamfanoni. Don kuma ganin ana aiwatar da irin wannan bincike, Kasar Amirka, ba ta dogara da budaddsiyar kasuwa ba, kadai.

Tsarin Hukumar Gudanar da Binciken Kananan Harkokin Kasuwanci (SBIR), na bayar da tallafin damar yin gasa, ga kananan kamfanoni da masu gudanar da bincike-bincike, a jami'o'i, wanda wannan ne takon farko, na sanar da jama'a, game da kayayyakin manyan kasuwanni. Hukumar ta SBIR tare da sauran kasashen duniya, na amfani da wadannan kwararan shirye-shirye, wajen hanzarta Kirkire-kirkire, da cimma biyan bukatar irin kufaden da kasa ke kashewa, a fannonin ilmi da bincike-bincike.

Hadin Gwiwar Dake Daure Kai

Ita kanta harkar kirkire-kirkire ba sauksi gare ta ba, musamman idan ta shafi hadin gwiwa tsakanin jama'ar dake fannonin tattalin arzikin kasa. Amma samun biyan bukatar kwaikkwaran hadin gwiwar kawo sababbin manufofin harkokin kasuwancin ne, kan rikide wajen dagula dangantakar dake tsakanin bincike-bincike da ci gabansu da kuma sababbin harkokin na fasaha. Wannan ya nuna ke nan, idan ana bukatar taimaka wa kirkire-kirkire, to dole, mu gano duk wani cikas, a tsakanin masana harkokin kimiyya da gudanar da da bincike-bincike da 'yan kasuwa da da masu jari da kuma

sauran wadanda ke da hannu, a harkokin tattalin arzikin kasa, domin kawar da su. Idan kuma muna son taimaka wa wannan hadin gwiwar, to akwai muhimmancin bayar da taimakon da ya kamata.

Yana da amfani, a danganta jama'a da harkokin binciken harkokin kimiyyar musababbin gurbacewar yanayi, daya daga cikin irin manyan tanade-tanaden da ake yi, na fokarin ganin kirkire-kirkire sun samu kasuwa. Wannan yunkurin ya hada da fungiyoyin dake cikin gida, kazalika da sauran masu son hada gwiwar dake kananan da manyan harkokin kasuwanci da jami'o'i da cibiyoyi da dakunan bincike. Har ila yau, ya kamata a hada da "jiga-jigan" kamfanoni da kasuwannin kudade. Su kansu harkokin binciken kimiyyar musabbabin gurbacewar yanayin, sun bambanta, inda kowannensu ya fi aiwatar da abinda zai yi, dangane da girmansa, ko kuma irin jama'ar da suka tallafi al'amarin.



Cibiyar Binciken Sararin Samaniya (NASA) ta Glenn, dake Jihar Ohio, ta bai wa wani Karamin kamfanin da ya shahara ga harkokin sarrafa karfe da fasahar zafi, dake Ohio, tallafin Hukumar SBIR.

Irin wannan hadin gwiwar na bukatar tsoma bakin cibiyoyin da suka samu nasarar hafe ra'ayoyin mutane da dama, dake da gagarumar niyyar samar wa sababbin harkokin fasaha kasuwa. A wani fannin kuskurewa, ko boye wata masaniya, kan kawo cikas ga samun nasarar irin wannan hadin gwiwar. Alal misali, mai yiwuwa, mai neman zuba jarinsa, ba zai fahimci irin yadda aka lissafa za a sayar da wannan sabuwar fasahar ba.

A wadansu lokuttan, wadansu masu zuba jarin kan yi wa hannun jarin wadansu jama'ar, hawan kawara, ko kuma su fi rabawa daidai da saura, wanda na iya kawo rashin jittuwa, ga hadin gwiwar. Duk irin shigen irin wannan ya faro, da wuya jarin jama'a ya kasance dunkule, wajen inganta sababbin manufofi. A wannan halin, dokokin kare mallakar fasahar dukiya, na taimaka wa abinda ya kamata, a yi, don haifar da sababbin manufofi.

Cibiyoyi su ke da haƙkin daidaita halayyar jama'a. Musamman wadannan sun kunshi dokokin kare dukiya da kulawa da tunanin sake tsarin yadda za a zuba jarurruka, da kwadago da tafiyar da harkokin kudsada da kuma samar da kasuwa. Har ila yau, gasar Dokokin Hukumar Gudanarwa ce, ke tafiyar da harkokin kasuwanci. Alal misali, duk abinda ya saba wa dokokin, na kange karfin manyan kasuwanni, wajen kayyade yadda masu karamin karfi za su zuba jari. Har ila yau halayyar jama'a da kasuwa, ke haƙikance harkokin bincike-binciken shirin magance gurbacewar yanayi, musamman wadanda ba su san muhimmancin kasuwanci ba, da makamar tafiyar da harkokin jama'a da kasuwancin kansa.

A harkar bincike-binciken shirin magance gurbacewar yanayi, musamman yadda ake tsara ta, wajen ganin ta yi gagarumin tasiri ga harkar kasuwa, na da hatsari, haka masu neman hada gwiwa da sauran jama'a, wajen ganin sun aiwatar da wadansu sababbin manufofin bincike, don yin kayayyaki.

Tabbatar Alkawari

Kodayake an lura cewa ƙananan harkokin kasuwancin sun fi kowa yada manyan harkokin fasahar kirkire-kirkire da ci gaban tattalin arziki, mafi yawan lokutta sukan fuskanci ƙalubalan gabatar da wadannan manufofi, ga kasuwanni.

Babban abinda ke ci wa ci gaban harkokin fasaha, tuwo a kwarya, tun farko, shine rashin jari.

Saboda rashin tabbas din sababbin manufofi, da wuya sanin dan kasuwa ya san yadda kasuwar kirkire-kirkirensa, za ta kasance ba. Abin nan da ake cewa "Kurmin Ajali" shine abinda zai faru daga tsakanin lokacin da ake ganin cewa wata fasaha za ta yi tasiri, amma jama'a ba su saba da ita ba, har ya zuwa lokacin da za ta fara bai wa jama'a sha'awar zuba jarin da ya kamata, don ta ƙara samun bunkasa.

Kasancewar irin wannan bayanin, ba madubi ba ne, cewa, muhimmancin wata fasaha, zai iya sa ta kai ga samun kasuwar dole, domin manufofi, masu kyau, da dama, na dushewa, kafinn a kai su kasuwa. Hatta manyan jarurruka, a Kasar Amirka, wadanda ake kyautata tsammanin sun kafu, sukan kasa cika alkawarin da suka dauka, na gudanar da kasuwanci da sarrafa kudaden da suka yi.

A 2008, masu zuba jarurruka a Kasar Amirka, sun zuba jarin fiye da dolar Amirka miliyan dubu 28 ga harkokin kasuwanci dubu uku da 808. ya zuwa karshen shekara, kashi biyu cikin uku na dukan manyan jarurukan na Kasar Amirka, sai suka koma hannun kamfanoni, yayinda kashi biyar cikin 100, kadai, suka kasance a inda aka zuba su.

Yanayin kasuwannai na iya kara dagula matsalolin da ya shafi inda aka fara zuba jarurruka. Tabarbarewar harkokin kufaden duniya na 2009, ya sa masu zuba jarurruka suka janye, inda abin ya fi amfanar jarurukan dake kusa da kasuwannin da aka fara zuba jarin.

Shirin SBIR

Don ganin an ketarar da sababbin jarurruka daga fadawa cikin “kurmin ajali”, Hukumar Kananan Harkokin Kasuwanci ta Amirka, ta bullo da wani shirin Binciken Kirkire-kirkiren Kananan Masana’antu, a 1982. Wanan hadin gwiwar, na tsakanin gwamnati da kamfanoni masu zaman kansu, ya yi gogayyar bayar da tallafai da kwangiloli ga kananan masana’antun dake bincikar harkokin fasaha, wadanda ke iya cika alkawarin da kwazon gudanar da harkokin kasuwanci, da nufin taimaka ma su, ingantawa da bunkasa sababbin kayayyakin da za su taimaka wa hukumomin gwamnati magance dukan matsalolin da suka shafi alkawurran kasa. Kufaden haraji ne, ke bai wa Hukumar ta SBIR kashi biyu da rabi, cikin 100, na dukan harkokin bincike da bunkasa kasafce-kasafcen kudi na hukumomin Gwamnatin Amirka. A kowace shekara, hukumomin kan zayyana matsalolin dake damun kananan masana’antu, a harkokin binciki da inganta halin rayuwar da suka shafi harkokin kimiyya da fasaha, don magance su, ta hannun shirin Hukumar ta SBIR.

Akan dunkule dukan matsalolin, a matsayin hukuma daya, don agazawa, ta gabatar da bukatun ga Hukumar SBIR, kai tsaye, daga kananan masana’antun, da aka jera sunayensu, a shafin yanar-gizo.

Kowace karamar masana’anta na iya bayyana wata matsalar da za ta fuskanta, daga irin wadanda ake neman agazawa, da kuma ayyukan da aka shirya yi, daga kudin tallafin na Hukumar SBIR. Kowace hukuma, daga cikin hukumomin goma sha daya, da aka zaba, za ta bayar da sunan wata karamar masana’anta ga rukunnan zaibubuka biyu, wanda shine tafarkin da ake bi, wajen zaben, da bayar da ayyukan kwangilar.

Kamar yadda aka saba, kusan kashi 20 daga cikin 100 na sunayen da aka miša, ke samun shiga, a kowace shekara. Wannan gasar ce ke kakkabe duk wata ragguwar masana’anta, domin dole ta kasance mai kwazo ga tabbatar da wata fasaha, ko harkar kasuwanci.

A bisa ga wannan gumurzun takarar ne, da zarar an zabe ka, to, ka cancanci tallafin na Hukumar SBIR.

Jerin Sunayen Kasashen Da Suka Yi

Galaba A 2009

1. Singapore
2. Korea ta Kudu
3. Switzerland
4. Iceland
5. Ireland
6. Hong Kong
7. Finland
8. Amirka
9. Japan
10. Sweden
11. Denmark
12. Netherlands
13. Luxembourg
14. Canada
15. Ingila
16. Isra'ila
17. Austria
18. Norway
19. Jamus
20. Faransa
21. Malaysia
22. Australia
23. Estonia
24. Spain
25. Belgium
26. New Zealand
27. China
28. Cyprus
29. Portugal
30. Qatar
31. Hungary
32. Jumhuiyar Czechoslovakia
33. Slovenia
34. Afrika ta Kudu
35. Bahrain
36. Jumhuiyar Slovak

- 37. Chile
- 38. Italy
- 39. Malta
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- 41. Tunisia
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- 43. Latvia
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- 47. Kuwait
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- 49. Rasha
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- 63. Panama
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- 65. Masar
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- 68. Azerbaijan
- 69. Sri Lanka
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- 71. Indonesia
- 72. Brazil
- 73. Vietnam
- 74. Colombia
- 75. Armenia
- 76. Macedonia

77. Georgia
78. Ethiopia
79. Jamaica
80. El Salvador
81. Jumhuriyar Kyrgyz
82. Honduras
83. Moldova
84. Pakistan
85. Algeria
86. Paraguay
87. Mongolia
88. Nijeriya
89. Uruguay
90. Uganda
91. Burkina Faso
92. Argentina
93. Tajikistan
94. Guatemala
95. Kenya
96. Bolivia
97. Syria
98. Nepal
99. Senegal
100. Peru
101. Namibia
102. Ecuador
103. Madagascar
104. Nicaragua
105. Zambia
106. Benin
107. Kamaru
108. Venezuela
109. Burundi
110. Zimbabwe

An samo wannan kididdigar ne daga: TKungiyar Kwararru ta Boston da Kungiyar Kwararrun Masana'antu ta Kasa — wata alama ga masu zuba jarurruka na kashin kansu, dake fannin harkokin fasaha da kasuwaci. Ta wannan hanyar ne, shirin Hukumar SBIR ke taimakawa, wajen magance gibin wadata masaniya, a tsakanin kananan masana'antu da masu bukatar

zuba jarurruka, wanda ya kasance siradin tsallake “kurmin ajali” da kara dankon zumuncin kimiyyar magance gurbacewar yanayi.

Shigar Sahun Kasashen Waje

Makasudin bullo da wannan shirin da Amirka ta yi, shine don harkokin kasuwanci, amma manufofi da tsare-tsare ne, ke karfafa gudanar da ayyuka, wanda ke samar da jarurukan da ake bukuta don taimakawa kafuwar karin harkokin kasuwanci, wadanda ke fitar da bayanai da alamomin bunkasuwar jarurruka, ko hukumomin sayen kayayyaki. Shirin na Binciken Kirkire-Kirkiren Kananan Masana’antu, ya zama aya ga shirin gasar kakkafa sababbin kamfanoni da aiwatar da manufofin da gwamnati za ta yi nazari a kai.

Don cin gajiyar tasirin muhimmancin ayyukan na Hukumar SBIR, gwamnatoci da dama, a duniya, sun shiga sahun gudanar da irin wannan shirin, don taimaka wa bincike-bincike da kananan masana’antu.

Kasashen Finland da Sweden da kuma Rasha sun koyi irin wannan aiki na Hukumar SBIR-type, kacokam. Kasar Ingila ma, na da irin wannan shirin. Har ila yau, a sakamakon wani gwajin da Kasar Netherlands ta yi, na fadada wannan shirin, har ya zuwa ga ma’akutun gwamnati, Kasashen Japan da Korea ta Kudu da kuma Taiwan, sun rungumi shirin na Hukumar SBIR, a fannoni da dama, na kai ga biyan bukata, don zama wani bangare na manufofin bincike-bincike na kasa.

Kwanan nan ma Kasar India ta bi sahun irin shirin na Hukumar SBIR, don inganta harkokin sasssan fasaharta na noma. Jerin gwanon kasashen dake shiga sahun shirin, ya nuna ke nan, yana da fa’ida da magance duk wadansu matsalolin da shirin bayar da tallafin da kwangila na Hukumar SBIR ya zayyana.

Duk da yake ana samun bambancin gudanar da harkokin na bincike-bincike, masana harkokin manufofi na duniya, na fuskantar irin wannan matsalolin, wajen inganta harkokin bincike-bincike. Dole su fuskanci irin yadda gasa ke kara fadada, a duniya, da karfin zimma da basira, yayinda za su tabbatar da dukan wani nazari da inganta irin yadda ake kashe kudade, ta hanyar kirkiro da sababbin ayyuka da dukiyoyi.

Shirin bincike irin na Hukumar SBIR na iya taimakawa, wajen sake fasalin jarurukan kasa, a harkokin bincike-bincike, kwarai da gaske, don samar da kayayyaki na gari, a kasuwanni. Tunanin na Hukumar SBIR ya nuna yana da amfanin da kasashe za su koyi da shi, kuma wani tunani ne, na kyautata manufofin bincike-bincike, a duniya.

Ba dole ba ne, ra’ayin da aka bayyana a wannan kasidat, ya zama daya da ra’ayi ko manufofin Gwamnatin Amirka.

Alaƙar Gwamnati da Kirkire-kirkire

Daga James P. Andrew, Babban Jami'in Hadin Gwiwar Kamfanin Kungiyar Kwararrun Boston



Wani dalibin Kolejin Sacramento dake California, Anthony Beanes ne ke daidai majigin kananan yara, a lokacin da yake koyon makamar aiki.

Tsayayyun manufofin gwamnati na da muhimmanci ga kokarin kamfanonin cikin gida, wajen gudanar da bincike-bincike. Manufofin gwamnati, masu dorewa, ma, sun zama muhimmai, wajen magance matsalolin kwazon ma'aikata da saka wa masu kirkire-kirkire da kuma kyautata yin amfani da duk wani kokari na gwamnati. In ji, James P. Andrew, babban abokin hulda, kuma babban darektan Ofishin Kamfanin Kwararru na Boston, (BCG), dake Birnin Chicago, kuma mai shugabantar ayyukan bincike-binciken kamfanoni. Yana marhabin a kai, a shafinsa na yanar-gizo, mai lamba: andrew.james@bcg.com.

An sha yin rubuce-rubuce game da kamfanonin kirkire-kirkire da kuma irin abubuwan dake sa su durkushe. Amma a gaskiya, babu abinda ke kawo hakan illa irin rawar da gwamnati ke takawa, da kuma hubbasar da take yi, wajen shimpida ka'idodin samun nasarar al'amarin.

Wani rahoton kwanan nan da Kamfanin BCG, tare da Kungyar Manyan Masana'antu ta Kasa, suka buga, ya nuna irin mu'amalar dake tsakanin gwamnatida 'yan kasuwa da kuma fwa{k}warar bukatar dake akwai game da bai wa harkokin kirkire-kirkire kyakkyawan shugabanci.

An yi bayanin ya kamata manyan jami'an harkokin gudanarwa, a ko'ina suke a duniya, da su inganta harkokin habakar kirkire-kirkiren da gogayya da kare mutuncin jarurruka, don zama wani babban jigon samu nasarar kamfanonin.

Amma, kowace kasa, akwai irin kirkire-kirkiren da suke kamace ta. Wadanda ke da manyan masana'antu na samun makudan kudafe da kyakkyawar rayuwa da kuma ingantacciyar hanyar kyautata jin dadin rayuwa, fiye wadanda ke kasa da su.



Dalibai ne, a sansanin Kirkire-kirkire, wanda babban ofishin Kamfanin IBM, dake Bangalore ta Kasar India, ya shirya, don habaka ilmin kimiyya da lissafi da aikin injiniya.

Kai ko taki daya aka samu, a yau, game da gogayyar kamfanonin, sai ya amfani tattalin arzikan duniya. Barkowar da kamfanoni ke yi, daga kasashe irin su India da China da Brazil da Gabashin Kasar Turai, ya bude wata kafar gudanar da harkokin kasuwanci a duniya. Kuma irin yadda ake

cunkushe kasuwannin duniya da kayayyaki masu arhar da ba ta ado, daga kowane lungu na duniya, ba karamar asara ba ce, ga mafi yawan harkokin kasuwanci. Muddin kamfanoni na bukatar kasancewa a cikin harkar kasuwanci, to dole su nuna kansu, ta hanyar mayar da hankali ga harkokin bincike-bincike, da gano sababbin hanyoyin binciken da kasuwanni. Dole kuma gwamnati ta taimaka wa wannan ƙokarin na bincike-bincike da tsayayyun manufofi.

Inganta Harkokin Ma'aikata

Babu abinda ya fi ma'aikata masu ilmi, inganci ga harkokin samun nasarar bincike-bincike, don haka har yanzu, ake ta farautar hazikan ma'aikata, game da irin gogayyar da kamfanoni ke yi. Gwamnati na iya inganta harkokin ma'aikatan, ta hanyar kashe kudaden da suka kamata, a wajen bayar da ilmi da tabbatar da ganin cewa, manufofin dokar shige da fice na taimakawa, maimakon dakushe yunkurin da ake yi, a fannonin bincike-bincike.

Duk da yake, sake fasalin harkokin ilmi, kan ɗauki lokacin mai tsawo, kuma sai a share shekaru, ana yi, amma ba a ganin alfanun abun, mafi yawan ƙokarin da ake yi na inganta harkokin ilmi da ma'aikata, bai da wuyar samu. Alal misali, kyautata harkokin koyar da ilmi a makarantun sakandare da na koyon sana'o'i, na iya bayar da tabbacin samun ma'aikata, ko wadsanda za su ci gaba da neman ilmi. A duk lokacin da aka danganta bukatu da ingancin masana'antu da harkokin kwararru da sana'o'in hannu, dalibai kan samu irin takardun ilmin da masana'antu ke bukata, su kuma kamfanoni su samu ma'aikatan dake da ƙwarewa.

Bugu da kari, manhajar ilmi da sassauta dokokin shige da fice, na iya inganta samun kwararrun ma'aikata. Kwararrun baki na iya habaka yanayin yadda ake gudanar da bincike-incike, a ƙasa. Wani sifiyon da Ofishin Nazarin Tattalin Arziki na Kasa ya gudanar a 2009, ya gano cewa, jihohin dake da kwararrun bañin ma'aikata, sun samun bañin dake da hañkin sayar da basirarsu, fiye da 'yan gari. Amma kuma, ai kowa ke amfana.

Habaka Samun Kasuwa

Dole kamfanoni su san yadda za su riƙa samun kasuwa, dangane da irin ƙokarin da suka yi, na gudanar da harkokin bincike-bincike. Idan kuma ba haka ba, ko dai su bar harkar kasuwancin, ko kuma su yi ƙaura zuwa wadsansu jihohin, ko ƙasashe, inda suka san za su sami kasuwa.

Gwamnatoci na iya taimaka wa ƙananan masana'antu, da hababa samun riba, wajen tilasta bin dokokin da suka kare mallakar duniya, ko wata basirar, ta hanyar sawwaka haraji, da bayar da hoto, da kuma manufofin da za su yi rangwame a kan kasafin kufade da makamashi da su wutar lantarki da makamantansu. An san bayar da rangwamen harajin gudanar da Bincike

da Inganta Kayayyaki (R&D), na rage farashin kayayyaki. Rahoton kwanan nan da Kamfanin BCG da Kungiyar NAM, suka bayar, ya nuna irin yadda kyakkyawar alafkar dake tsakanin harkokin binciken da inganta kayayyaki da harkokin haraji da kuma yadda tattalin arziki fasa ke gudana. Daga cikin kasashe 20 dake da ingantaccen tattalin arziki, kamar yadda arzikan jama'ar kasashensu ya nuna, 19 na rangwanta harajin gudanar da bincike. Abin sha'awa kuma shine, daukacin kudin harajin da ake tsawwalawar bai da wani tasirin, a-zo-a-gani.

Har ila yau, taimaka wa hukumomin samar da kudaden haraji yana da amfani. Mafi yawan kasashe na da manufofinsu na rajistar bincike-bincike ko hazafka, da kuma kare mallakarsu. Kubucewar haqqin mallaka, ko wata hazafka, domin kawai manufar wata fasa, ko rashin tilasta bin doka, wani al'amari ne da ya rataya a wuyan manyan jami'an harkokin kasuwanci, yana kuma iya kawo asarar yawan kudaden da ake samu wajen haraji. Idan muka yi la'akari da irin wadannan matsalolin, babu shakka, wadansu kamfanonin su kwashen harkokin bincikensu, zuwa wadansu wurare.

A Dade Ana Yi

Harkokin bincike-bincike da kirkire-kirkire na bukatar lokaci da natsuwa. Kamfanoni na iya kirkiro abubuwa da dama, don amfani yau da gobe, da kuma shekaru masu zuwa, idan gwamnati ta taimaka. Muddin kuma ana son biyan bukata, to dole a samar da manufofi da fashin haraji masu dorewa, tunda yake wadansu harkokin bincike-binciken, ko kirkire-kirkire, kan dauki kusan shekaru goma, ko fiye da haka, kafin a fara cin amfaninsu.

Su ma sauran manufotin, irin na ilmi da kyautata harkokin ma'aikata, na iya daukar tsawon lokaci, kafin a samu gabalarsu. Dole gwamnatoci su dage, har sai wadannan manufotin nasu, sun biya bukata. Amma sanin irin lokacin da bincike-binciken da kirkire-kirkire za su dauka, da dagewa ta fannin taimakawa da kuma ci gaban aiwatar da manufotin, ba karamin aiki ba ne.

Saukaka Gudanar Da Bincike

Gwamnatoci na iya saukakawa da ingantawa, kazalika da samarwa duk wata hazafka ko kirkire-kirkire kasuwa, ta hanyar gudanar da nazari hanyoyi mafiya sauksi. Dukan gwamnatoci, musamman wadsanda ke da dan karamin arziki, na iya samun galabar hada gwiwa da kamfanoni da fungiyoyi masu zaman kansu da makarantu, wajen kara yawan kayayyakin da ake yi, a kuma samu fa'ida. Kodayake hukumomi da jami'o'in Kasar Amirka na bayar da kudaden gudanar da bincike-bincike game da harkokin kimiyya, manyan jami'an harkokin kasuwanci sun fada mana cewa, sarrafa wadannan bincike-binciken na da wuyar gaske.

Gwamnatoci na bukatar su tambayi irin abubuwan da kamfanoni ke bukata, da kuma ta yadda za su taimaka, don ganin sun biya ma su bukatu.

Tallata Rundunar Masu Kirkire-kirkire

Rundunar da ake nufi, ita ce ta kamfanonin dake wuri guda, masu yin abubuwa iri dabam daban, amma sai da taimakon juna. Idan kuma har gwamnati ta janyo hankalin irin wadannan kamfanonin da masana'antu, to dole ta taimaka masu, wajen kokarinsu na bincike-bincike, idan ma har gwamnati ta taki sa'a, tattalin arzikinta na iya tashin gwauron zabo. Wannan al'amarin yana da fa'ida ga kananan kasashe da kuma jihohi. Su kuwa manyan kasashe, rundunar ba ta wani muhimmancin da ake tsammani, domin kowace masana'anta ba ta kai girman da ake tunani ba, musamman a lokacin kafa ta, da har za ta yi gagarumin tasiri.

Kodayake kananan kasashe na iya kasadar zuba jarin fara gudanar da bincike-bincike, a wadsansu masana'antun, don ganin sun kara samun gindin zama, amma al'amarin akwai tsautsayi. Duk wani tattalin arzikan dake da karfi, komai irin nasara da ya share shekaru yana samu, kasancewarsa da rugujewarsa ta danganta ne da irin yawan masana'antun da yake da su. Wadsansu ma da suka durkushe, kwanan nan, sun gaya wa duniya tatsuniyyoyi. Duk abinda zai yi kwaikkwaran tasiri, to yana da hadsari.

Kyakkyawan Shugabanci

Duk wani taimakon da ake ji, ake kuma gani, dangane da harkokin bunkasa bincike-bincike da Kirkire-kirkire da rangwamen haraji da canje-canjen manufofi, da dai sauransu, wani sako ne game da muhimmancin mayar da hankali ga kirkire. Idan kuma za a yi, to, ya amfani jama'a.

Kasashe irin su Korea ta Kudu da China da Singapore, wadsanda suka fito fili, suka kuma hakikance wajen tallafa wa bincke-bincike da kirkire-kirkire, suna janyo hankalin masana harkokin bincike-binciken da kirkire-kirkire da dama, daga dukan bangarorin duniya.

Irin wannan abin ya zo daidai da abubuwan da kamfanoni da gwamnatoci ke bukata, wanda kuma ya fi taimaka wa gwamnatin, wajen biyan bukatun jama'arsu. Muddin kasashe na bukatar taimaka wa harkokin bincike-bincike da kirkire-kirkire, to, wa'adi ya yi, da gwamnatoci za su kara mayar da hankali, ga dage wa tallafa wa muhimmanci al'amarin. Inda babu kasa ake gardamar kokuwa, don babu abinda zai share wa kasashen duniya hawaye, da ya wuce, yin gogayya da samar da aiki yi ga jama'arsu da kuma kyawawan hanyoyin Kyautata jin dadin rayuwa.

*A kuma bincika littafin Steve Strauss, game da irin rawar da gwamnati kan takal game da kananan kamfanoni **Government's Role in Encouraging Small Business**, na watan Janairun 2006 eJournal USA, da harkokin kasuwnci da kananan kamfanni **Entrepreneurship and Small Business** ko yanar-gizon <http://www.america.gov/st/econenglish/2008/July/20080814221735XJ>*

[yrreP0.4618189.html](#)

Ba dole ba ne, ra'ayin da aka bayyana a wannan kasidar, ya zama daya da ra'ayi ko manufotin Gwamnatin Amirkat.



Paul Nelson ne, na Kamfanin Harhada Motoci na Allied Vehicles dake Glasgow ta Kasar Scotland, a hagu, da na'urar lantarki ta mota kirar Peugeot da gwamnati ta tallafa masa, wajen kerawa.

Tarihin Kirkire-kirkire

Michael Bremans

Dan Kasar Belgium da ya gano hanyoyin da ake cin riba, amma ba ribaa ba.



Michael Bremans

Wai alheri danko ne? Masanin harkokin kirkire-kirkire na iya samun nasarar da har zai kai ga cimma ribar abinda ya kirkiro, har kuma kuma jama'a su amfani da shi? Idan dai ta bangaren Mick Bremans ne, wani masanin harkokin kirkire-kirkire, dan Kasar Belgium, to, amsar wadannan tambayoyin sun zama gaskiya. Bremans, shine babban jami'in Kamfanin Ecover, kamfanin dake yin kayayyakin tsabtace muhalli daga ganyayen itatuwa da muka ma'adinai. Idan aka kamanta iri kayayyakin da wannan kamfani da kuma wadanda ake yi, a sauran masana'antu, sai a ga cewa,

bayan arha da kyawon kayayyakin da kamfanin ke yi, ba su da wani lahani. Kayayyakin kamfanin na Ecover, irin su ruwan sabulu da hodar wanke-wanke da kuma garin sabulu, ba su da sinadarin nan, na farar wuta, wauta Phosphate ko Chlorine, kuma duka a kwabalen roba, ake sayar da su.

Dimbin jama'a na sha'awar dukan kayayyakin da ba su da cuta, ba cutarwa. Kuma ita wannan sha'awar ke kawo kasuwar da har Kamfanin na Ecover ya samu riba, ba uwar kudi ba, har dolar Amirka miliyan 15, a 2007. Komai ciki-lafiya baka-lafiya, da jama'a da wanda ya kirkiro kayayyakin da kuma yanayi, babu wanda zai ce ya cutu.

Al'amarin ba zai kasance haka ba, idan da kayayyakin da Bremans ya kirkiro, ba su da aminci ko kuma suna da tsada. Yin kayayyaki, 'yan tagajan-tagajan, a lullube su da kyalkyali ba shine ba. Haka ma kayayyaki masu shegiyar tsada, ba za su yi tasiri ba, duk da adon da za a yi ma su. Mai saye na bukatar nagarta ne da kuma rangwamen farashi, kuma wanda ba ya cutarwa. Mun san wannan yana da wuya ga kamfanoni. Mafi yawa, yin kayayyaki daga irin kayayyakin da Bremans ya kirkiro, kan ci kudade, wanda na iya sanyawa farashin kayayyakin ya tashi. Don haka duk kamfanin da yake yin irin wadannan kayayyakin, to dole ya dage.

Bremans, wanda ya samu lambar yabon Mujallar *Times*, a 2008, dangane da tsabtace muhalli, ya yi imanin cewa, bai wa kowane ma'aikaci haakkinsa, na yanke shawara game da yadda ake gudanar da ayyuka a kamfani, shi ke haifar da inganci da kuma tunanin sababbin abubuwa.

"Dole ne kirkire-kirkire su dawwama, a wannan zamanin da muke ciki," in ji Bremans. "Wannan kuma ya shafi kowa, har da leburan kamfani. Dama wa yake lura da yadda ake yin kayayyakin da kuma yadda injuna ke aiki, fiye a jama'ar dake aiki, yau da kullum?"

Yana da muhimmancin gaske, a rika kula da tunani da kuma hasashen ma'aikata, amma wannan bai taka kara, ya karya ba, a wajen kamfanin Ecover. Lokacin da Bremans ya shigo kamfanin, ayyuka dai sai yadda suka kama, ake yinsu. "Lokacin da na fara aiki a kamfanin Ecover, babu komai sai dakin binciken dake bayar da ra'ayoyin irin abubuwan da kamfanin za yi. Amma, yau, kowane sashe yana bayar da gudunmawarsa ta yadda za a tafiyar da aiki."

Don haka Kamfanin Ecover ya zama wani abin koyi, game da kirkire-kirkire, ba don tsabtace muhalli kadai ba, har ma irin yadda ake gudanar da aiki da inganta yin kayayyaki da kuma samun riba.

Yau, Kamfanin na Ecover, ya nuna a kasashe 26 cewa, kowa ya gyara ya sani, kuma kowa ya bata ya sani. Kuma ya kamata a tashi tsaye ga kirkiro sababbin abubuwa, a kuma lokaci daya.

Ben Casnocha, shine mawallafin littafin My Start-Up Life: What a (Very) Young CEO Learned on His Journey Through Silicon Valley

Ba dole ba ne, ra'ayin da aka bayyana a wannan kasidar, ya zama daya da ra'ayi ko manufofin Gwamnatin Amirk.

Dokar Kare Mallakar Basira Da kirkire-kirkire

Daga Michael A. Gollin



Ma'aikata ne, ke tsince kwayoyin maganin cutar kanjamau (AIDS), a Dakin Bincike na Port Elizabeth dake Afrika ta Kudu, Kasar da ta bijirewa hakikance mallakar basira game da irin wadannan muhimman magungunan.

Tsayayyar dokar kare mallakar basira da tunanin wani, da kuma makamantsu, na inganta kirkire-kirkire da daidaita hafkin basirar da kuma 'yancin kai wa ga biyan bukata, in ji Michael Gollin, wani abokin huldar Kamfanin Lauyoyi na Venable LLP, dake Birnin Washington, D.C.,

kuma shugaban Kamfanin Bayar da Shawarwari game da Bin Diddikin Haƙkin Basira, kuma mawallafin Littafin Inganta Kirkire-kirkire a Duniya: Driving Innovation: Intellectual Property Strategies for a Dynamic World.

Kirkire-kirkire na samo tushensu ne daga wani abinda aka sani, wanda daga bisani su haifar da sababbi. Masana dabaran Kirkire-kirkire na samun nasarar gina sababbin abubuwa ne daga tsofaffi, don ganin sun yi aiki tare. Kirkire-kirkire kan kalubalanci abubuwan da aka saba da su, don sanin wanda zai tsira, kuma su kan sa wadansu abubuwa su gaza. Irin gagarumin ci gabon da ake samu, a fannonin sadarwa da sanin rayuwar kananan halittu da yawaitar wayoyin tarhon tafi-da-gidanka, da maganin cutar kanjamau da kade-kade da litattafan karatu, ta samo asali ne daga Kirkire-kirkiren da ake yi.

Kwanan nan Kasar Amirkat ta kafa cibiyar tattara bayan Kirkire-kirkire ta ƙasa, inda ta shiga cikin sahun kasashen da suka ci gaba, wajen cin gajiyar Kirkire-kirkire, don cin gajiyar jama'arta. Duk wata dabaran Kirkire-kirkire, dole ta kara mayar da hankali ga irin abubuwan dake samar da nasarar Kirkire-kirkiren, kamar dabaibayin dake tare da cibiyoyi da dokoki da kuma abinda aka fi sani da kare haƙkin mallaka, wanda sune abinda ya fi muhimmanci, amma ba a sani ba.

Haƙkin mallaka ya shafi na kayayyaki, ko kwaikwayo, ko alamar kamfani, ko kuma sirrin ciniki, wanda kowannensu yana da dokokinsa dabam daban, a kowace ƙasa. Dokokin Haƙkin Mallaka sun dade a duniya, a matsayin wata kafar da jama'a ke amfana da harkokin Kirkire-kirkire Kirkire-kirkire. Dangantakarsu da Kirkire-kirkire da mallakakkiyar duniya, ta wuce yadda ake tsammani, abinda ya yi sanadin abubuwan dake faruwa yau da kullum.

Mallakakkiyar dukiya na iya shafar wani Kirkire-kirkire, irin su na'ura mai ƙwaƙwalwa, da harhada magunguna da aikin noma da kade-kade da wallafa litattafai da dai sauransu. Kamar a kammalalliyar na'urar sadarwa, haƙkin mallaka na iya zama wani jigon da zai kururuta yunkurin bil-adama, na da ya Kirkiro wani abu sabo.

Har ila yau, wannan haƙkin ke shimfida hujjojin hadin gwija da zuba jarurruka, game da basira da hazakar da jama'a zasu san abinda ake ciki. Amma dole ake garkama kaimi da linzami ga irin wadannan Kirkire-kirkiren, domin jama'a su amfana, a kuma gina sababbin kayayyaki daga tsofaffin, don kuma ganin an ci gaba da bullo da wadansu Kirkire-kirkiren.

Daidaituwar hakan ke inganta ci gaba da Kirkire-kirkire. Kamfanonin Kirkire-kirkire sun dogara ne da masu Kirkire-kirkiren da kuma kokarin

ganin sun kare wa kowa hakkinsa. Idan kuwa aka samu ragwancin hakkin mallaka, to sai wani ya kwari wani.

Daidaituwar Al'amura

A shekarun da suka shude, dokar hakkin mallaka ta game dukan kasashe masu arziki da matalauta. Amma kara kaimi ga bincike-bincike da muhawarori da canje-canje da harkokin horaswa game da basirar jama'a, a cikin 'yan shekarun nan, ya sa an bai wa bori kai ya hau, dangane da kyautata jin dadin jama'a, ba tare da yawaita canje-canje ba, da za su kwari jama'a da yawa.



Sweden's Pirate Party advocates free music file-sharing and no patents

Tun lokacin da shugaban Tsibirin Venice suka kafa dokar kare mallakar basira, da kuri'u 116, da suka amince, wanda 10 kadai ne ba su amince ba, a 1474, sai a cikin Karni na 19, aka murtuke da gardandamin ko kasashe za su amince sanya hannu a kan dokar kare mallakar basira ta duniya, da aka kafa, a wannan lokacin, yayinda a yau, wadansu fungiyoyin na goyon bayan dokar, bayan wadansu suna nan, ba su yarda ba.

Kuma yiwar daidaita irin batutuwan da wannan dokar ta tanada, ya danganta ne da irin yadda aka ci gaba da wadannan gardandami. Masu bayar da shawarwarin a kafa dokar a kasashen Brazil da Afrika ta Kudu, da kuma sauran wurare, sun bayar da hujjar cewa, kafa dokar kare mallakar a kan magungungan cutar kanjamau, za su iya hana warkar da cutar, yayinda

wadanda ke harhada magungunan suka kalubalanci cewa, raguwar dokar na iya lalata duk wata fa'idar zuba jarin da ya kamata, don binciko wadansu sababbin magunguna. Yanzu masana'antu na fama da irin yadda ake nadar kade-kade da linzaman na'ura mai kwakwalwa da hotunan fina-finai, a banza, a yanar-gizo. A halin yanzu ma, akwai Jam'iyyar Mahara, a siyasar Kasar A halin yanzu ma akwai Jam'yyar Mahara, a siyasar Kasar Swedish, wadda ta yi imanin cewa, ya kamata a ci gaba a nadar kade-kade, babu ko kwabo, a kuma rarraba duk wata wallafa, ga dukan mai so, don su ba su ga wani tasirin da dokar kare mallakar za ta yi ba.

Don kuma gane irin yadda dokar ke tangal-tangal, sai mu yi la'akari da halin da jama'a za su shiga. Watau kana bukatar amfana da basira ta, haka kawai, amma ni ka hana ni taka, wadda ka kakkare. Ma'ana ita ce, ina kai rai, ina kai kasuwa. Idan na gano magani, kai kuma ka tsara wani kidfa, to idan har kana son yin amfani da maganina, to ni ma ka bar ni, in ji kidfanka. Watau sai mun yi juna Katanga ne, kawai za mu tsira? Amma da wuya mu samu wadanda za su zuba jarurruka a kirkire-kirkiren na mu, kuma da wuya mu sake kirkiro sababbi.

Yanzu dai akwai jayayya, a tsakanin abinda muke so, watau boye basirarmu da kuma bukatar jama'a su yi amfani da ita. Mai yiwuwa muna iya daidaitawa, ko kuma mu ja daga. Magana ddaya ita ce, dukanmu ba za mu amfana ba, yayinda don jama'a muka yi. Hanya, mafi a'ala, ita ce mu daidaita dokar ta kare mallaka, don kowa ya amfana, amma a yi wa kowa tarnaki.

Daidaita dokar IP yana da muhimmanci a kirkire-kirkiren da ake yi a duniya. Alal misali, ana yin fina-finai a Dandalin Hollywood da Dandalin Bollywood dake Bombay da na Nollywood dake Nijeriya. Masu shirya fina-finai a Hollywood sun bayar da shawarar da a kara karfin dokar, zuwa sauran kasashe, domin yawan nadar fina-finan, barkatai, na sa su yi asara. Amma wannan hujjar na da rauni, domin abinda suke cewa shine: "ka kare doka ta, a kasarka, domin in amfana." Hujja mai karfi ita ce: "goyi bayan tafarkin da za a daidaita dokar ta IP, domin za ta amfane ka."

Hakika, na yi magana da masu shirye fina-finai, a India da kuma Nijeriya, wadanda su ma suke fo'karin kare basirar ayyukansu na fina-finai, da ake ta karyawa, a shagunan dake Amirka!

Ana sha'awar daidaita wannan dokar ta IP, a duniya, don ganin an inganta kirkire-kirkire, a ko'ina.

Ya-Allah don maganin dake ceto rayuka ne, ko nunin wata al'ada, cikin kade-kade ko fina-finai, dokar IP na bukatar abubuwa irin su hanyoyin da za a daidaita ta, filla-filla. Kuma ya kasance dokar daidaituwar ta bambanta a kan kowace kirkira, da kuma kasashe, amma abin kauna shine, masu

Kirkire-kirkiren su mallaki basirarsu, su kuma masu son amfani da basirar, su hau teburin yarjejeniya da neman yin amfani da dokoki.



Tun lokacin da aka sake shirya fim din Amirka, mai suna Spider-Man, karo na uku, a India, masu shirya fina-finai, a kasashen biyu, ke ta kukan da karfafa tilasta yin amfani da dokar mallaka, a sauran kasashe.

Abin takaicin samun yin hakan zai ci kudafe masu yawa, kuma akwai wahala. Daga yanzu, kamfanoni da kungiyoyin da abin ya shafa, na bukatar bayar da himma, don zama wani bangare na inganta sharuddsan dokar ta IP. **Fadin Albarkacin Baki**

Dokar mallakar basira, na iya zama wata hanya ta tsira gogayya da bunkasar tattalin arziki, idan aka danganta haƙkin mallakar da alamar kamfanoni, da yanayin arzikin kasa. Har ila yau, ana iya yi wa dokar ta IP, kallon wata hanya a masu kirkire-kirkire ke iya fadar albarkacin bakinsu, game da basirarsu. Don haka, ke nan, ba don kasuwa kadai ake kare mallakar haƙki ba, har sai don ci gabon jama'a, na 'yancin fadar albarkacin bakinsu, da kuma yadda suke son rayuwarsu ta kasance. Wani mawallafin na farin cikin ganin ya amincewa yanar-gizon Wikipedia da ta nuna ayyukansa, amma wani ya gwammace ya garkama wa litattafansa dokar mallakar basira. Ya

kamata kuma masu kirkire-kirkire su samu irin wannan zabin. Kirkire-kirkire da dokar mallaka ta IP, sun sha yin gumurzu da jun, kuma haka za su gaba da gwabzawa. Wannan kuma ba zai haifi da da ido ba. Amma, maimakon a kai mumzalin da wani zai sha kasa, kamata ya yi gwamnati ta tabbatar da ganin cewa, dokar ta IP ta samu daidaituwa, tsakanin ‘yancin mai mallaka basira da kuma masu son amfani da basirar. Dokar ta IP na iya bai wa kowa haikkinsa, ta kuma haddasa gogayya, maimakon rarraba harkokin bayar da tallafi da toshiyar baki da kyaututtukan da gwamnatoci da masu hantu da shuni ke yi.

Karkasa tsarin na iya sa kafa dokar kirkire-kirkire, a wani yanki, amma kuma kuma sai yadda wani ya zaba, ko yake son lankwasa ta.

Akwai gasar murnar da mai kirkire-kirkire ke da ita, ko alfahearin da mawallafi k da shi, ko amincewar da dan kasuwa ke da ita. Wadannan sune irin abubuwan da za mu amfani da su, don taimaka wa masu kirkire-kirkire, a duniya. Idan kuma za mu hakan, to dole, mu tabbatar cewa, dukan jama'a za su amfana da duk wata shawarar da muka yanke, ta yin amfani da ko magani ne, ko abinci ne, ko kuma masaniya ce, ko kade-kade ne, ko kuma ilmi.

A duba littafin mayar da hankali kan dokar mallakar basira Focus On: Intellectual Property Rights wanda Ofishin Shirye-shiryen Watsa Labarai ga Kasashen Duniya ya buga. ko yanar-gizon

<http://www.america.gov/publications/books/ipr.html>

Ba dole ba ne, ra'ayin da aka bayyana a wannan kasidar, ya zama daya da ra'ayi ko manufotin Gwamnatin Amirkha.

Karin Inda Aka Samo Bayanai

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Web Sites

Foreign Policy Research Institute

Program on Teaching Innovation

Addresses the history of innovation from economic, scientific/technological, and sociological perspectives.

<http://www.fpri.org/education/innovation/>

Innovation and Economic Growth: Lessons From the Story of ENIAC

Audio lecture from electronics pioneer Rocco Martino on how the computer became the catalyst for the largest increase of international wealth in history.

<http://www.fpri.org/multimedia/20090309.martino.eniac.html>

Innovation — Life, Inspired

Companion Web site to Public Broadcasting System's 2004 television series.

<http://www.pbs.org/wnet/innovation/>

Innovation Timeline

Traces innovations from the invention of fire.

<http://www.wired.com/culture/geckipedia/magazine/geckipedia/innovation>

Jerome and Dorothy Lemelson Center for the Study of

Invention and Innovation

Established at the National Museum of American History of the Smithsonian Institution to document the stories of innovators and their discoveries. <http://invention.smithsonian.org/home/>

What Matters: Innovation

McKinsey & Company site featuring essays by researchers, academics, journalists, policy makers, and executives on big questions. <http://whatmatters.mckinseydigital.com/innovation>

Filmography

***ABC's Nightline: If You Can't Beat 'Em, Blog 'Em* (2005)**

<http://fh.films.com/id/12407/If%20You%20Can%20t%20Beat%20Em%20Blog%20Em.htm>

Summary: Examines the blogger community, reviews major news stories that were broken by bloggers, eJournal USA 37 demonstrates ways in which blogging differs from traditional reporting methods, and presents interviews with individuals who have used their personal blogs in innovative ways. Running time: 22 minutes.

***Masters of Technology* (2004)**

<http://shop.wgbh.org/product/show/10160> Producer: WGBH Boston (Public Broadcasting System)

Summary: A series of one-on-one conversation, with exceptional men and women who have made a significant impact on technology. Running time: Five parts, 30 minutes each.

***October Sky* (1999)**

<http://www.imdb.com/title/tt0132477>

Director: Joe Johnston. Summary: The true story of Homer Hickam, a coal miner's son who developed an interest in rocketry after he was inspired by the Sputnik launch. With a group of friends, he experiments with rockets they build themselves, and they are encouraged by a teacher to enter the National Science Awards competition. Running time: 108 minutes.

***Swiss Family Robinson* (1960)**

<http://www.imdb.com/title/#0054357/>

Director: Ken Annakin. Summary: The heroic tale of a shipwrecked family on a deserted island that uses teamwork and ingenuity to overcome the obstacles of nature and transform their new home into a "civilized" community. Running time: 126 minutes.

***Ten9Eight: Shoot for the Moon* (2009)**

<http://ten9eight.com>

Director: Mary Mazzio. Summary: Inspirational stories of several teens from low-income communities who competed in the Oppenheimer Funds/NFTE National Youth Entrepreneurship Challenge 2009. Running time: 85 minutes.

***They Made America* (2004)**

<http://www.pbs.org/wgbh/theymadeamerica/>

Producer: Public Broadcasting System. Summary: Profiles 12 American innovators whose ideas and entrepreneurial spirit gave birth to commercial milestones such as the steamboat and cultural touchstones such as the Barbie doll. Running time: Four parts; 60 minutes each.

Gwannatin Amirka ba ta da hafkin daukacin bayanan da ke wadannan kafofin da aka lissafa. Dukan kafofin na yanar-gizo na aiki, har ya zuwa watan Nuwambar 2009.

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